DETERMINATION OF WHO BENEFITS MOST FROM

PRENATAL CLASS ATTENDANCE

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ABSTRACT

A review of numerous studies that had been conducted on the subject of prenatal classes revealed two important themes: the inconclusiveness of prenatal class effectiveness and the apparent predominance of middle class women among prenatal class attenders.

The main purpose of this study was to determine which expectant women appeared to derive the most benefit from attending prenatal classes and to determine what it was that most affected health outcome - attendance at prenatal classes or the characteristics of the mother attending classes.

Two hundred and twenty-two British Columbian mothers who had recently delivered infants constituted the study sample. The study focuses on three variable areas: prenatal class atttendance factor, personal characteristics of the mothers, and health-related outcomes in terms of health knowledge, behaviour and status.

A questionnaire was developed specifically for this study and was issued to the mothers in the sample. The bulk of the data collected derived from the questionnaire responses. Both a mailed and interview format were used. Other data came from official Birth Notices.

The study demonstrated that with regard to a few health-related outcomes, for example, use of labour breathing techniques and infant birthweight over 3000 grams, women who were multiparous, of minority group status and had average education appeared to gain the most from attending

prenatal classes. It is not known if parity, ethnicity and education of mothers are characteristics that might predict benefit in terms of other outcomes.

Within the variable sets studied, prenatal class attendance was shown to be the strongest predictor of visits to the physician, infant complications and family planning. Other outcomes, for example, use of labour breathing techniques, delivery mode and infant feeding practice, however, were better predicted by mother's personal characteristics, i.e., parity, language, education and age. In no situation did any of the variables examined make appreciable effects in the outcomes measured.

Despite the weak associations and lack of associations demonstrated between prenatal class attendance and outcomes, the sample mothers cited what they thought were benefits arising from participation in classes. Foremost among these was the social/emotional support mothers received from fellow class participants. As well, knowledge gained about pregnancy, and labour and delivery were found to be categorized as useful by many.

Recommendations resulting from this study centre around improving outreach efforts to women not attending classes. Also, the need to elicit constant feedback from class participants about class content was stressed.

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CHAPTER I

INTRODUCTION

The issue underlying this research project was the question of whether
prenatal classes, as they are offered in B.C., are useful for all expectant
mothers and their partners, in terms of influencing health knowledge, health
behaviour and health status.

Prenatal education through classes has traditionally been a significant
part of the Perinatal Program of Public Health Nursing in British Columbia
(B.C. Ministry of Health). During the 1970s and the first years of the
1980s, these classes were heavily promoted among the general public,
although usually the greatest thrust of promotion was aimed at first-time
mothers. This promotion, evidently, has had some success in terms of
overall utilization rates, as in 1980 it was reported that during the next
year, "a 34% increase in the number of parent education classes offered was
needed in order to accommodate the number of parents enrolling for series."[1]
Utilization of this program continues to increase.

In addition to the official agency (provincially-operated) classes,
non-government prenatal class series are offered by a number of private
organizations and individuals. The exact extent to which such classes are
available in B.C. and the attendance figures of same are unknown. Although
attendance at such classes is taken into consideration in the analysis of
this particular study, the overriding purpose of the study is related to

discerning the usefulness of prenatal classes in the province's Perinatal Program.

It was said that utilization of the latter has been increasing. On the surface, this increase might seem a positive accomplishment. There are issues related to the program, however, that warrant investigation. They are, that: (a) the effectiveness of prenatal classes in terms of attaining stated desired outcomes is inconclusive; (b) the majority of couples who attend classes seem to come from society's middle socio-economic strata and conversely, the majority of couples who do not attend classes come from society's lower socio-economic strata; and (c) the program consumes a considerable amount of service time and is, therefore, expensive.

Issue (a): The Inconclusiveness of Prenatal Class Effectiveness

No comprehensive investigation of the effectiveness of the provincial prenatal class program has been undertaken since 1976 (Stark),[2] and there is little consistent evidence to support claims of effectiveness. The effectiveness of classes needed to be determined using specific indicators of benefit related to: (i) classes as a source of knowledge and support during pregnancy; (ii) the promotion of lifestyle patterns during the pregnancy and post-partum periods (e.g., smoking/diet habits); and (iii) health status of mother and infant (e.g., birthweight, pregnancy complications). It also needs to be ascertained whether certain types of people benefit more from attending classes than others.

Various investigators have attempted to determine the effectiveness of prenatal classes. The reports reviewed present mixed but inconclusive evidence of the influence of classes in terms of desired health-related outcomes, although most demonstrate at least one or more positive results from preparation.[2-23]

The results of an early non-comparative study by Thoms and Karlovsky (1947), reported by Cogan, suggested that primiparas who had attended classes had fewer depressed (low apgar) infants at birth, shorter labours, fewer operative deliveries, less blood loss, smoother convalescence and became happier mothers.[3]

Davis and Morrone's 1962 comparative study,[4] also of primiparous women, found attenders to be less anxious during pregnancy, to more often have concrete plans for their babies, to more often plan to breastfeed and to smoke less, while Enkin et al (1972), as reported by Cogan, demonstrated that "attendance at classes is associated with less medication, less pain and a more positive experience in giving birth ...." (p. 5).[3]

In a study by Ryan et al (1981), primiparas were interviewed three days post-partum. Significant findings were that attenders experienced less pain during labour, used less analgesia during labour, smoked less often during pregnancy and more often chose breastfeeding for their infants.[5]

A research project designed to evaluate the outcomes for Lamaze-prepared mothers (1978) found that these patients had fewer Caesarian sections, less fetal distress, less post-partum infection, and fewer perineal lacerations as compared to non-prepared mothers.[6]

Yarie (1977), too, was able to demonstrate some correlations between attenders and positive outcomes in terms of knowledge gained about pregnancy, childbirth and childcare.[7]

Although the above studies did find some association between prenatal class attendance and positive health-related outcomes, most of the studies reported mixed and sometimes conflicting results. These inconsistencies make it difficult to make definitive statements about the overall effectiveness of prenatal classes.

Davis and Morrone, who did report a number of positive findings, also found that for attenders, labour duration, use of forceps and use of anaesthesia were the same as for non-attenders.[4] Similarly, Huttel et al (1971) discovered no significant differences between primiparae prepared according to the Psycho-Prophylactic Method and a control group, with regard to frequency of obstetrical complications and infant apgar scores. The only significant differences between the two groups was the experimental group's less frequent use of the drug, oxytocin, during labour.[8]

In Stark's 1976 investigation of a group of B.C. mothers, it was judged that there were few significant differences between prenatal class attenders and non-attenders concerning outcomes. She, in fact, found that attenders had a longer duration of labour and a more negative perception of labour than non-attenders, but that these differences were not significant.[2] Whether the former finding should be construed as a "negative" outcome is not clear. Ryan et al, likewise, noted that for attenders (primiparas) labour was of longer duration, though the difference

was significant.[5] On the whole, however, his findings supported the notion that classes are helpful for primiparas.

Yarie, in spite of some positive findings, as reported earlier, also discovered that there were no significant differences between two groups of B.C. women in relation to smoking and nutritional habits during pregnancy.[7] She found, as well, that more non-attenders were breastfeeding.

In Walker and Erdman's (1984) survey, increased knowledge and confidence regarding labour were demonstrated to be short-lived gains of class attendance.[9] Following labour, knowledge and confidence returned to pre-class levels.

Findings from Timm's (1979) evaluation of prenatal classes sponsored by a hospital indicated that use of medication in labour was lower for class participants but that birthweights were not significantly different regardless of age, race and parity.[10]

Mogan, in testing for gains in knowledge about infant-related nutrition, discovered that there were important inconsistencies in the information learned by class attenders.[11]

One measure of the effectiveness of prenatal classes might be the perception of their usefulness by attenders by leading to positive health outcomes. Here, too, the evidence culled from five studies is neither positive nor consistent.

Chamberlain and Chave (1977) showed that one-to-one contacts in a clinical situation were the most rewarding for prenatal clients although most attenders did say that classes were interesting and "something" was learned.[12] Pridham and Shultz (1981), similarly reported that patients rated discussions with doctors as the most useful source of information on

labour and infant care, while prenatal classes were rated sixth in usefulness out of a total of six sources named.[13]

In Kiss' (1983) study about health behaviour changes among prenatal class attenders, the major influences for changing health behaviour were determined to be the women's personal knowledge; the books, magazines and pamphlets read; and the contacts with physicians, family and friends.[14]

Adams in 1982 in England found that of a group of class attenders interviewed, only 21% said that the classes were a main source of information on perinatal matters. However, although attenders had positive feelings about the classes in terms of the relaxation techniques learned and the other women met in classes, a considerable number of them felt they were not prepared for labour and childbirth.[15]

Classes were rated more highly as a source of information by the B.C. women of Stark's study. Seventy-one percent of the class attenders stated classes to be their principal source of information on labour and childcare.

Different researchers have questioned whether the health outcomes measured in studies might be more a function of mothers' social backgrounds than class attendance. Cogan, as a result of reviewing several studies surmised that "...any evident effects of childbirth preparation were more likely to be related to differences in the type of people who elect classes than to the effects of the preparation per se" (p. 2).[3] She thought, however, that studies which had controlled for socio-demographic factors such as those of Hughey (1977) and Enkin (1972), clearly and reliably demonstrated some positive effects of preparation.

Standley et al in 1978 carried out a study of primiparas, however, that suggested that the women's background characteristics of age and education were strongly associated with anxiety about childbirth and, subsequently, with the amount of medication used during labour.[16]

It has been mentioned that a mother's personal-social background might be a key determinant of health outcome. At issue, though, is the necessity of determining whether class attendance might have a greater influence on some types of women than on others, or in other words, that the benefit from attendance might be variable for different groups of women.

Margaret Nelson (1982) explored the effect of formal prenatal education on women of different socio-economic classes and found that the "...impact of childbirth education was much greater among working class women" (p. 339).[17] She began her work with the assumption that women of different social backgrounds enter classes with knowledge levels and attitudes that are dissimilar, and that this is one of the reasons women benefit and learn differentially.

A study by Norr et al (1977) has linked higher social status, less traditional attitudes towards sex roles and great marital closeness with both better preparation for childbirth and, ultimately, with less pain and greater enjoyment during childbirth.[18]

Measuring the impact of prenatal class programs has been difficult for researchers because there are so many potential confounding variables, such as social class and parity, that need to be considered during analysis or controlled for at the outset.

Nancy Nelson (1981) states since childbirth is now perceived as a more complicated process medically (more diagnostic and clinical procedures),

there is an increased need for prenatal education, but she realizes there is still controversy regarding the "right" content and style of education. She supports an "at-risk" approach.[19] She believes that classes need to be tailored for and are potentially most effective for special needs women, such as those who are alone, teenagers and women from language and/or ethnic minority groups.

This review of various studies sheds some light on the issue of prenatal class effectiveness. None of the studies reviewed, however, demonstrated a <u>causal</u> relationship between prenatal class attendance and positive health-related outcomes.

Issue (b): The Apparent Predominance of Middle Class Over Working Class Women Among Prenatal Class Attenders

One problem perceived by prenatal class teachers and planners alike is the fact that those pregnant women thought to be most in need of prenatal instruction appear to constitute the majority of those not availing themselves of it. It is suggested that these women are not necessarily restricted to the working class alone, but probably include, as well, the very young, the unmarried, the geographically-isolated and ethnic minorities. It would be useful to determine if there are some selection factors that are of a kind that could be positively influenced through improved outreach strategy and program planning, should they be implemented.

Various studies support the notion that more attenders are of middle class than of working class background. The studies of Davis and Morrone, Stark, Chamberlain and Chave, Yarie, Leonard, Cave and Norr et al, for

example, all found attenders to be associated with the higher socio-economic classes.[4,2,12,7,20,21,18] These same researchers, other than Chamberlain and Chave, and Norr et al, also, noted that most attenders were older than non-attenders.[12,18] Yarie and Cave, as well, specified that fewer non-attenders were of ethnic minority background.[7,21]

Health behaviour - selection into prenatal classes being one example - has not been examined only in the context of participants' socio-economic characteristics, per se. Rosenstock, for instance, developed a model of health behaviour in which it was theorized that a person decides to take "health action", e.g., attend classes, depending on how susceptible she perceives herself to be for a particular health problem, on how serious she perceives the problem to be, and how available and effective she believes a particular course of action to be, and on whether she sees any serious barriers to taking action.[22] This health behaviour model formed the framework for Vertinsky et al's study into compliance factors regarding a voluntary screening program.[23] The factors examined in such programs may have relevance in the examination of selection factors related to prenatal class programs. It may also be that these factors correlate with social class, with women of one class perceiving a health problem and its required action differently from women from another class.

Whether pregnancy and childbirth is actually perceived by women as a health problem, possibly requiring preventive or treatment action, is not clear. Margaret Nelson's understanding of why prenatal classes have traditionally enjoyed more support from middle class than working class women is based upon her belief that prenatal classes support: (i) the feminist goal of childbirth "as an important life experience ... in which

father) can actively participate", (ii) the "consumer movement's (encouragement of) clients to be knowledgeable", and (iii) the "back-to-nature romanticism" prevalent today (p. 339).[17] It is assumed that it is to the women of middle class that these factors have most appeal and relevance.

Issue (c): The Considerable Amount of Service Time the Prenatal Program Takes

The Public Health Nursing Division of the B.C. Ministry of Health in this time of fiscal conservatism is having to be more accountable for its service outcomes. In line with this, a valid concern could be that perhaps too much time is spent in prenatal classes teaching the already "converted". The question has been asked whether fewer classes would suffice for most of today's attenders, as it is assumed that the majority are from a higher social strata than non-attenders and may, therefore, be motivated learners requiring less "teaching" than is currently given. It is supposed that such women usually find ways of supplementing information already received and needed about pregnancy, childbirth and infant care.

Hall, in a 1983 review of the antenatal care received by British women, concluded that "... resources are being dissipated on blanket care applied uncritically to all pregnant women with little clinical benefit nor satisfaction for women or the clinical and mid-wifery staff" (p. 103).[24] She suggested a need for rationalization and a concentration of resources on high-risk women. Although Hall is speaking of more than just prenatal education by including prenatal medical care, and although her findings may not be pertinent to the B.C. situation, her review has some possible

relevance for the subject of resource expenditure (time and money) on prenatal education.

As resources become increasingly limited, the time-consuming prenatal class program must be directed to those who, it is believed, would most benefit from it. Public Health Nursing in B.C. has begun to recognize the necessity of this, as evidenced in a 1982 memorandum on Public Health Nursing Priorities, in which nursing activities are divided up in order of priority among three categories: essential services, medium priority services and low priority services.[25] Under "essential services", activity number eight among 23 activities listed, is "two early prenatal education sessions (all prenatals) giving highest priority to "at-risk" individuals." The 23rd activity under "essential services" reads, "two later prenatal education sessions, all prenatals, but highest priority to "at-risk" individuals." Additional prenatal classes for special groups, e.g., "Caesarian birth, teenage, adoptive parents, breastfeeding, etc." are cited as medium priority activities.

Some Differences Between This Study and Those Reviewed

This study proposed to differ from the studies just cited in some respects.

The studies of Thoms/Karlovsky, Standley, et al, Davis/Morrone, Ryan et al, Huttel et al, Leonard, Mogan and Yarie[3,16,4,5,8,20,11,7] were limited to samples of primiparas while Kiss restricted hers to prenatal class attenders alone. This study looked at both primiparas and multiparas, and at both class attenders and non-attenders.

An adequate response rate with limited response bias was being sought in this study. Three of the reviewed studies indicated the possible presence of significant response bias. Bias was not tested for in Pridham's 1981 study. He had a 39% non-response rate. Similarly, response bias may have been present in Chamberlain's and Nelson's studies, which had 40% and 32% attrition rates, respectively.[12,17]

A failure to control for socio-economic factors while analyzing the relationship between class attendance and outcome, also occurred with some studies. These were studies conducted by Thoms/Karlovsky, Walker/Erdman, Ryan et al, Huttel et al, Davis/Morrone, Timms, Yarie and Kiss. Nelson restricted her control to one factor - working class.[3,9,5,8,4,10,7,14,17]

Whereas, this study will analyze associations between independent variables and dependent variables by moving from cross-tabulation analysis to simple correlational analyses to multiple correlational analysis, a number of the reviewed studies are restricted to bivariate analysis. In other instances, no significance testing was carried out so that the "strength" of the associations described was not proven.

By examining health-related benefits in terms of health knowledge, behaviour and status, this study attempted to be broad in its scope and to keep in mind what was assumed to be a logical sequence of outcome. Some studies, for a reason, limited their outcome measures. Enkin and Hughey, for example, looked for labour-related benefits alone;[3,6] Pridham, at perceived usefulness of classes.[13]

STUDY OBJECTIVES AND HYPOTHESIS

Objectives

This study will attempt:

1. To determine which factors are related to the decision to attend or not to attend prenatal classes.

2. To determine the differences between class attenders and non-attenders in terms of certain health-related outcomes.

3. By weighing the effects of various factors and class attendance history on outcome, to determine what single factor (or what combination of factors) is the most important determinant of outcome.

Hypotheses

1. Prenatal class attendance will affect and be affected by the level of knowledge, health behaviour and health status of mothers.

2. There are selection factors which include health, education and social characteristics of women that can be used to predict which types of expectant women would most benefit from prenatal class attendance.

END NOTES

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CHAPTER II

METHOD

Mothers who had recently delivered infants constituted the study sample. Characteristics differentiating the selected mothers from one another were identified, thereby allowing the original pool of mothers to be split into various categories for purposes of analysis. In particular, the sample was divided into those mothers who attended prenatal classes and those who did not. Other characteristics differentiating the mothers were educational background, prenatal health status, age and parity. It was intended that, by examining factors such as prenatal class attendance history and those related to selection into classes, as well as the association of such factors with defined outcomes, a picture would appear that depicted who was attending classes. Such examination would disclose those who might benfit the most from class attendance and which of the "frontline" factors seemed to be most associated with the outcomes.

Figure 1 illustrates the perceived relationship among factors being studied.

FIGURE 1

STUDY FACTORS

Age
Health
Education
Social Status
Marital Status
Parity
M.D. Visits
Ethnicity

Support Network
Perceived Purpose of
   Classes
Previous Attendance
Health Behaviour
Convenience of Class
   Location, etc.
Awareness of Classes
Locus of Control

EXPECTANT
MOTHERS

MOTHERS
ATTENDING
PRENATAL
CLASSES

MOTHERS NOT
ATTENDING
PRENATAL
CLASSES

INTERVENING/
MODIFYING
VARIABLES
- No. classes
  attended
- Class content
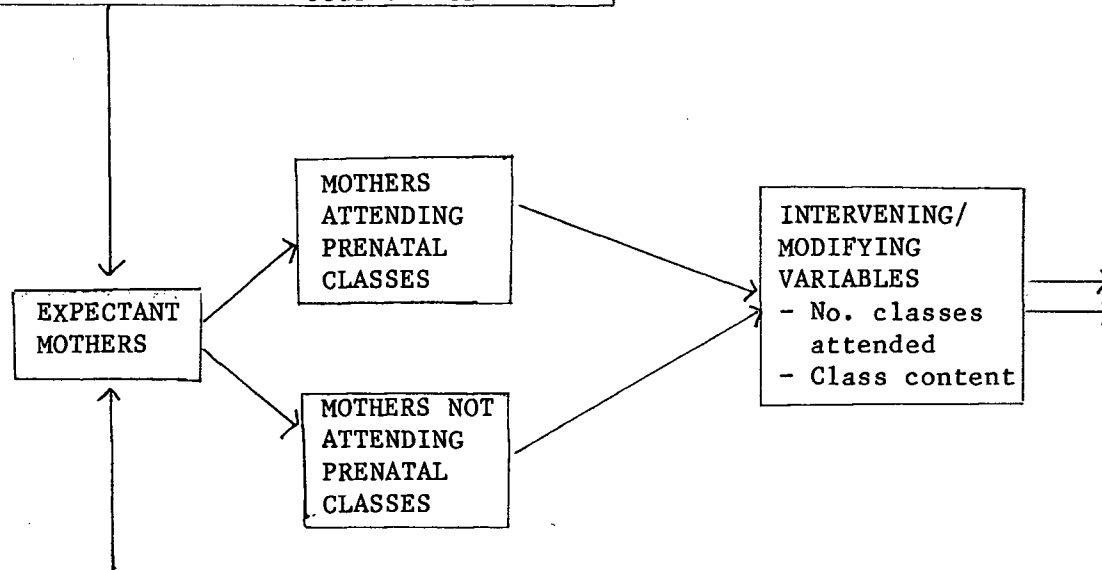
OUTCOMES

1. Knowledge
   - several variables
2. Behaviour
   - changes re smoking,
     alcohol intake,
     exercise, diet
   - infant feeding
   - infant immunization
   - contraception
   - M.D. visits
   - labour-related

3. Health
   - infant birthweight,
     apgar, birth
     complications
   - maternal weight gain,
     birth complications

4. Class Attenders'
   evaluation of classes

Age
Health
Education
Social Status
Marital Status
Parity
M.D. Visits
Ethnicity

Support Network
Perceived Purpose of
   Classes
Previous Attendance
Health Behaviour
Convenience of Class
   Location, etc.
Awareness of Classes
Locus of Control

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Information gathered from health unit copies of Birth Notices (see Appendix A) and from mothers' responses to questionnaires (see Appendix B) was examined to identify the personal socio-demographic, prenatal health and attendance history characteristics of mothers and to determine presence of particular health-related outcomes of pregnancy.

Permission was obtained from the Assistant Deputy Minister of Preventive Services in the B.C. Ministry of Health (see Appendix C) and from the University of British Columbia's Clinical Screening Committee for Research and Other Studies Involving Human Subjects. Verbal approval was also acquired from the relevant health unit Medical Health Officers and Public Health Nurse Supervisors.

Sampling Process

Two hundred and twenty-two post-partum mothers were selected from the Central Fraser Valley Health Unit and Coast Garibaldi Health Unit catchment areas to become the study subjects. Although they originated from two different areas, the subjects were combined and treated, for convenience, as one sample for most of the analysis.

Subjects were all mothers who had given birth between January 15, 1983 to February 17, 1983. Names were taken from the Birth Notices filed in the two health units. Excluded were mothers who were not keeping their infants, mothers from the Whistler office (Coast Garibaldi Health Unit) catchment area and stillbirth situations.

Figure 2 demonstrates the geographic distribution of the mothers (in the study sample) between and within the two health units.

FIGURE 2

GEOGRAPHIC DISTRIBUTION OF MOTHERS IN SAMPLE

Central Fraser Valley Health Unit

(3 catchment areas
- Maple Ridge
- Langley
- Mission)

All catchment areas

Maple Ridge   Langley   Mission
50 mothers   90 mothers   23 mothers

163 mothers

Coast Garibaldi Health Unit

(4 catchment areas
- Gibsons
- Powell River
- Squamish
- Whistler)

3 catchment areas
(Whistler excluded)

Gibsons   Powell River   Squamish
20 mothers   24 mothers   15 mothers

59 mothers

Total Sample
222 mothers

The mothers making up the study population constituted a cohort of mothers from two districts who gave birth during the period January 15, 1983 and February 17, 1983.

In B.C., there are a total of 17 provincial health units as well as the health units of the Greater Vancouver metropolitan area and the Capital Regional District. Because this study tried to limit itself to making conclusions about post-partum mothers who live within areas serviced by the 17 provincial health units, it was from these mothers the study sample was taken.

The Central Fraser Valley and Coast Garibaldi Health Unit areas were not selected randomly from the total 17 health units. They were purposely chosen for their convenient geographic location (Lower Mainland), and for the apparent mix in rural/town living and in economic conditions.

Mothers serviced by the Whistler office in Coast Garibaldi Health Unit were excluded from the sample. Because their numbers were few and the women were spread thinly in and between the Town of Whistler and Pemberton, prenatal classes were not a regular offering in the area. Instead, the public health nurse initiated contact with pregnant women offering and providing them prenatal education/counselling, most typically on a one-to-one basis. As "class" attendance and non-attendance were the primary independent variables of this study, it was decided that mothers of the Whistler area would be unsuitable as study subjects because a consistent opportunity for them to participate in prenatal classes was not present.

Mothers not keeping their infants and mothers with stillborn infants were left out of the study sample in an attempt to limit the sample to

mothers experiencing relatively normal post-partum periods, in terms of infant-related criteria.

A few words must be said about the comparability of the mothers in the study sample and base population. Because selection of mothers into the study was not carried out in random fashion, the possibility of sample bias existed. The extent to which the chosen sample was representative of the base population was, therefore, uncertain.

Comparison between the sample and the B.C. base population was made by examining the distribution of four variables, as provided by the Division of Vital Statistics of B.C.[1] See Tables 1, 2, 3 and 4. By focusing on the percentage distributions of the variables measured, the study sample appeared sufficiently representative of mothers giving birth in all 17 provincial health units. It is recognized that sample bias may nevertheless have been present because a number of characteristics of mothers that may have had potential to influence study outcomes were not compared in the base and sample populations. These are characteristics such as parity, prenatal class attendance history, lifestyle factors, obstetrical complications and socio-economic factors. Because true representativeness of the sample cannot be confirmed, the generalizability of any study conclusions is to be considered limited.

TABLE 1

PERCENTAGE LIVE BIRTHS BY
BIRTH MODE, STUDY AND
BASE POPULATIONS

BIRTH MODE	STUDY HEALTH UNITS (Jan. 15 - Feb. 17/83)	ALL 17 PROVINCIAL HEALTH UNITS (1st Quarter 1983)
Spontaneous	69	68
Forceps	6	11
Caesarian	23	19
Other	2	2
	100 (n = 222)	100 (n = 6878)

TABLE 2

PERCENTAGE LIVE BIRTHS BY
LEGITIMACY, STUDY AND
BASE POPULATIONS

LEGITIMACY	STUDY HEALTH UNITS (Jan. 15 - Feb. 17/83)	ALL 17 PROVINCIAL HEALTH UNITS (1st Quarter 1983)
Legitimate	87	82
Illegitimate	13	18
	100 (n = 222)	100 (n = 6878)

TABLE 3

**PERCENTAGE LIVE BIRTHS BY
AGE OF MOTHER, STUDY AND
BASE POPULATIONS**

MOTHER'S AGE IN YEARS	STUDY HEALTH UNITS (Jan. 15 - Feb. 17/83)	ALL 17 PROVINCIAL HEALTH UNITS (1st Quarter 1983)
∠ 20	8	8
20 - 29	63	69
30 - 39	27	22
739	1	1
Unknown	1	1
	100 (n = 222)	100 (n = 6878)

TABLE 4

**PERCENTAGE LIVE BIRTHS BY
INFANT BIRTHWEIGHT, STUDY AND
BASE POPULATIONS**

BIRTHWEIGHT IN GRAMS	STUDY HEALTH UNITS (Jan. 15 - Feb. 17/83)	ALL 17 PROVINCIAL HEALTH UNITS (1st Quarter 1983)
∠ 2500	1	5
2500 - 2999 (2500 - 3000)*	14	13
3000 - 3499 (3001 - 3500)	37	36
⟩ 3499 (⟩3500)	48	46
	100 (n = 222)	100 (n = 6878)

Birthweights for CFHVU and CGHU were grouped as indicated in the brackets. The difference in groupings is not thought to be significant.

Study Variables

Three kinds of variables constituted the primary focus of this study. They were:

- the major independent variable

- the selection variables that modify or antecede the independent variable <u>or</u> are independent in themselves

- the dependent variables

Prenatal class attendance/non-attendance was the major independent variable being examined. It was realized that differentiating mothers only in terms of current attendance and current non-attendance would be short-sighted as it would ignore the probability that a number of current non-attenders had attended prenatal classes in the past.[2] It was important to be able to separate women not only with regard to their having attended or not attended classes during their most recent pregnancy but also with regard to their having ever attended classes. The influence of past attendance on selection/non-selection into current classes and on outcome was a probability that had to be anticipated.

A further differentiation of the independent variable was made in terms of attendance at private classes versus health unit sponsored classes. It was surmised that women attending the typically longer and more expensive private classes may be different from women attending health unit classes. Any differences found between outcomes of private class attenders and health unit class attenders could possibly be explained as being a function of both selection and class content factors.

Data collection was organized, therefore, to access information from the mothers in the study, not just on current attendance, "yes" or "no",

but also on previous attendance, and on the type of classes currently attended.

The choosing of the selection variables to be included in this study was based, in part, on the belief that certain background characteristics would probably have an influence on a woman's decision to participate in an educational program such as prenatal classes. Some of these same characteristics would most probably also have a strong impact on outcomes. The variables examined included social class, education, cultural background (ethnicity, religion), social network, accessibility to classes, parity, previous attendance, age, health and perception of classes' purpose. These variables were chosen as a result of having reviewed a number of related studies, cited in Chapter I, that suggested their importance in helping to predict attendance and health outcomes. A woman's sense of control over her own health was examined as well.

The variables that define the social-cultural aspect of a woman's life are ones that are traditionally included in studies such as these, as are those variables related to physical status. This is done most often in an attempt to control for bias. Here, however, there was an intention to go beyond "controlling" to demonstrating that, in certain cases, it is some of these characteristics, not the prenatal class attendance factor, that play the more influential role in bringing about health-related outcomes, while in other cases, these characteristics play a secondary role to the prenatal class attendance factor. For definition of the key variables, see Appendix D.

Although it was intended that the selection variables be regarded as antecedent to the independent variable, class attendance/non-attendance, it

was necessary to recognize that, sometimes, in a retrospective study they might very well represent outcomes of attenders. Variables such as perceived purpose of classes, locus of control, information sources used, may fall into this category.

The outcome dependent variables selected for scrutiny fall basically into three different categories:

- knowledge

- behaviour

- health-related status

Ideally, to test knowledge gain over a period of time, one would wish to conduct a pre- and post-test of knowledge, such as prior to class attendance and after class attendance. This was not done in the study. Instead, a number of forced-choice statements were included in the questionnaire in order to elicit knowledge of certain facts at one point in time - post-partum. Information related to health care during pregnancy, to labour, and to infant nutrition was elicited. A more subjective picture of knowledge outcome was acquired by asking those mothers who attended classes whether they "learned something new" having attended classes. Information received in this manner needs, of course, to be viewed with skepticism. However, there seemed to be some merit in assessing the attenders' opinions about knowledge gain.

Knowledge that does not carry through to positive behaviours might be considered ineffective. A decision was made, therefore, to look at the behaviour of mothers in the study, in terms of smoking, diet, alcohol use and exercise, as well as, for example, visits to physicians, use of information sources, behaviour during labour, infant care, family planning

practices. The patterns of the first four behaviours were examined for the pre-pregnancy, pregnancy and post-partum periods. It was the change or maintenance of these behaviours over the pre-pregnancy to post-partum time that was scrutinized rather than the absolute behaviour levels at one point in time.

Although the positive health status of mother and infant are chief end goals of health education programs such as prenatal classes, these may be the most difficult to define, measure and establish as "outcomes" of any program. In this study the greater emphasis was placed on knowledge and behaviour measures. Health status outcomes that were investigated included those related to labour complications, infant gestational age, infant birth weight and infant apgar scores.

Outside the main independent, selection and dependent variables examined, factors related to number of classes attended by individual mothers and to class content were explored. It seemed important to establish whether the number of classes attended by mothers made any difference in the outcomes measured. Class content, per se, was not objectively measured although a review of the objectives for the prenatal class programs in the Central Fraser Valley and Coast Garibaldi Health Units indicated that the topics covered are reasonably standard. The main topics dealt with in health unit classes are generally divided as follows:

1. <u>Early Bird Classes</u>:   (1st trimester of pregnancy)
   Changes during pregnancy
   Fetal development
   Lifestyle during pregnancy

2. <u>Later Classes</u>:   (3rd trimester of pregnancy)
   Understanding of and preparation for labour
   Infant care
   Adapting to parenthood

An important thrust of health unit classes is expressed clearly in the statement, "emphasis is on classes in early pregnancy where nutritional and lifestyle modifications . . . are discussed".[4]

The content of classes offered through private organizations was not examined. The unknown number of different series made this an impractical endeavour, but it can be assumed that the private classes cover similar topics addressed by health unit classes, perhaps in more depth and possibly with a more intense bent towards non-intervention in pregnancy and delivery.

Data Collection

The measuring instruments used in this study included:

1. <u>Birth Notices</u>. The Birth Notice provided information on geographic location of the mother, marital status of the mother, delivery mode, labour complications, infant's gestational age, infant's birthweight, infant's apgar scores and infant problems noted. The accuracy and completeness of the information found on the birth notices was not validated for this study. The data recorded were assumed to be reasonably accurate if not necessarily comprehensive, and were abstracted and used to provide basic information on the mothers and infants.

2. <u>Prenatal Class Attendance Books</u>. It was intended that the prenatal class attendance recordings in the health unit offices would constitute one set of information be used for determining who the attenders and non-attenders of health unit classes were in the study population. In cross-checking some of these data with that provided

by the subjects in their responses to questions about attendance, it was found there was much discrepancy. Either the mothers were over-reporting attendance or the health unit attendance records reflected under-reporting. It was decided that the information provided by the attendance records would be discarded, with attendance/non-attendance as defined by the mothers themselves constituting the measure of attendance. An assumption was made that error was more likely to have occurred in the gathering of attendance statistics in the health units than in self-reporting of attendance/non-attendance by mothers.

3. Questionnaire. The bulk of the data for this study were collected by a questionnaire for post-partum mothers developed specifically for this study (see Appendix B).

The questionnaire was tested in a pilot study involving one to two months post-partum mothers. Twenty mothers were randomly selected (without replacement) from all the mothers who had given live birth during a one-month period in the Maple Ridge area. The objectives of the pilot study were:

  a. To practise part of the main study sampling procedure, that is, the random sampling procedure.

  b. To test the questionnaire's clarity to mothers in order to make any necessary revisions with wording.

  c. To determine the extent of non-response that might be expected and to try out a "reminder" system.

  d. To check the adequacy of the codes chosen for the pre-coded questions in order to make any necessary revisions.

e. To draw up possible coding categories for the open-ended

questions based on the responses received.

Revisions to the questionnaire were made as a result of the pilot

study. A code book was drawn up (see Appendix E). The "reminder" system

was kept as originally designed.

The questionnaire was designed to obtain information about a subject's

personal background characteristics, prenatal class attendance history and

selected outcomes in terms of health-related knowledge, satisfaction with

health services, health behaviour and health status. The rationale for

seeking information on these variables has been discussed earlier.

Reliability of the questionnaire was not established.

The questionnaire was mailed to 182 subjects and was to be used as an

interview guide with 40 subjects.

The 40 interview subjects were randomly selected by taking a random

sample from each of four health unit office areas: 10 subjects from Maple

Ridge, 15 subjects from Langley, 8 subjects from Gibsons and 7 subjects

from Powell River. Initial contact was made with the subjects selected for

interview by letter (see Appendix F), which was then followed up with a

telephone call. Verbal permission to interview was requested over the

phone and later verified by the mother just prior to the actual interview

session (see Appendix G). Interviews were conducted to check if

information gathered in this manner would be more detailed or clearer than

might result from mailed questionnaires. All the interviews were conducted

by the main investigator. Coding reliability was not sufficiently tested.

A minor attempt at testing reliability was made by taping two of the

interviews and having two different people (the author and one other

person) code the interviews. On a couple of questions, discrepancy was noted but was of a minor nature. Coding for the actual study was carried out by one person (Mary Spoke).

One hundred and eight-two letters (see Appendix H) were mailed to the remaining study population (222 - 40 = 182 mothers).

A certain level of non-response to the mailed questionnaire was anticipated as a result of the pilot study undertaken. It was realized that the covering letter with its assurance of anonymity for the subject, and the stamped/addressed return envelope would not be sufficient to prompt every mother to respond. Anonymity was assured because questionnaires were identified only by number, after the initial stage of eliciting response. Even before then, only the principal investigator was able to tie numbers to names. Each sample participant was identified by number only for analysis purpose.

Reminder letters were sent to those from whom complete questionnaires had not been received within two weeks (see Appendix I). A second reminder letter along with a second copy of the questionnaire, plus another stamped /addressed return envelope was sent to each mother who remained non-responsive. It was hoped that with this procedure a better than 80% response rate would be achieved.

4. <u>Interview Technique Versus Mailed Questionnaire</u> Two strategies for collecting data via the study questionnaire were used in this study. This was done mainly to determine if one method was superior to the other in terms of being able to achieve more thoughtful and thorough answers to the questions posed.

The results suggested that on the whole, the mailed questionnaire fared well as a data gathering strategy. Response rate was similar for the two techniques. Also, perhaps because the study topic was one that seemed to particularly interest new mothers, the answers given to the mailed questionnaire compared favorably relative to the interview responses; answers seemed often as candid and rich in detail though admittedly more consistently so in the interview setting. The latter was most probably a result of the implicit encouragement to expand on responses that a personal face-to-face encounter affords.

Having affirmed the mailed questionnaire's basic legitimacy, there is one further observation regarding the interview techniques worth mentioning. The interview setting allowed the interviewer the opportunity to clarify questions and response categories that were not clearly understood by the interviewees. Questions relating to exercise, diet, smoking and breathing during labour, for instance, caused confusion for a few mothers. It must be assumed from this that the quality of answers to some of the same questions in the mailed questionnaire might have been adversely affected although the pilot study should have demonstrated this.

What has been learned from using the interview technique in this study is that extensive use of the interview strategy as part of the pilot study would have been most useful. The interview provides the best method for testing questionnaire clarity.

Response Rate

One hundred and forty-seven (80.8%) sample mothers responded to the 182 mailed questionnaires, and 30 (75%) sample mothers out of a total 40

approached agreed to be interviewed using the questionnaire. Overall response rate in this study is, therefore, 79.7% (177/222).

Although a better than 80% respone rate was desired by the researcher, the response rate achieved is high enough to be thought satisfactory. During computer data analysis, one case was lost so that for the greater part of this study, findings were based on responses from 176 respondents, not 177.

Response Bias

The question of how the women who participated in the study compared to those for whom no response was received was important to determine.

Bias was checked for in relation to the following ten variables: mother's age, marital status, parity, gestational age, delivery mode, infant birthweight, infant apgars, infant birth complications, mother birth complications and mother's areas of residence. Information on these variables was derived from birth notices.

The X^2 test was chosen to determine if important differences existed between study participants and non-participants on some of the above factors. A null hypothesis (no significant differences) was to be accepted if the significance level associated with the X^2 was greater than 0.05.

When the factors marital status, parity, mother's age, delivery mode, birthweight, and infant and mother birth complications were tested against the response factor, no systematic bias was found (see Tables 5 to 11). Younger mothers, for instance, did not respond significantly more than older mothers (Table 7) nor did mothers who experienced a spontaneous vaginal delivery respond significantly more than those who experienced more

complicated birth procedures (Table 8). A tendency towards bias was noted
in terms of parity with response more closely allied with fewer
pregnancies.

Appendix J contains further tables (32 to 37). The X^2 was not
performed on these tables because of the small numbers in some of the table
cells. By scanning the percentage distributions, however, comparability
continues to be evident between responders and non-responders, but perhaps
to a lesser extent. This might, in part, be because factors such as
birthweight and delivery mode are broken down into a larger number of
categories. Perhaps from a practical viewpoint these finer sub-categories
are not potentially useful for determining bias.

Overall, response bias appeared to be negligible.

TABLE 5

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS
BY MARITAL STATUS

	Legally Married		Other		
Responders	158	(100%)	19	(68%)	
Non-Responders	36	(19%)	9	(32%)	
	194	(100%)	28	(100%)	n = 222

$$X^2 = 2.15 \quad df = 1 \quad P = 7 \quad .10$$

TABLE 6

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS
BY PARITY

	Primipara 1		Multipara 2-3		3		
Responders	82	(85%)	84	(78%)	11	(65%)	
Non-Responders	15	(15%)	24	(22%)	6	(35%)	
	97	(100%)	108	(100%)	17	(100%)	n = 222

$$X^2 = 5.44 \quad df = 2 \quad P = 7 \quad .05$$

(N.B. X^2 of 5.99 associated with P = .05)

TABLE 7

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS
BY MARITAL AGE

	17-24 Years		25-29 Years		30-42 Years	
Responders	61	(85%)	70	(82%)	45	(73%)
Non-Responders	11	(15%)	15	(18%)	17	(27%)
	72	(100%)	85	(100%)	62	(100%) n = 219

$$X^2 = 3.88 \quad df = 2 \quad P = > .10$$

TABLE 8

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS
BY DELIVERY MODE

	Spontaneous		Other	
Responders	123	(81%)	54	(77%)
Non-Responders	29	(116%)	9	(23%)
	52	(100%)	70	(100%) n = 222

$$X^2 = 0.54 \quad df = 1 \quad P = > .80$$

TABLE 9

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS BY BIRTHWEIGHT

	$<$2999 Grams		$>$ 3000 Grams		
Responders	153	(81%)	24	(71%)	
Non-Responders	35	(19%)	10	(29%)	
	188	(100%)	34	(100%)	n = 222

$X^2 = 1.92$ df = 1   P = $>$ .10

TABLE 10

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS BY INFANT BIRTH COMPLICATIONS

	None		Minimum - Moderate		
Responders	137	(81%)	40	(77%)	
Non-Responders	33	(19%)	12	(23%)	
	170	(100%)	52	(100%)	n = 222

$X^2 = 0.31$ df = 1   P = $>$ .70

TABLE 11

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS BY MATERNAL BIRTH COMPLICATIONS

	None		Min. - Mod.		Serious		
Responders	119	(82%)	37	(77%)	21	(75%)	
Non-Responders	27	(18%)	11	(23%)	7	(25%)	
	146	(100%)	48	(100%)	28	(100%)	n = 222

$X^2 = 0.88$ df = 2   P = $>$ .50

Statistical Treatment

Statistical analysis was conducted in stages. Cross-tabulations and simple Pearson's correlations were first utilized to determine existence of bivariate relationships between variables. In most instances, either the Chi-square Test or Fisher Exact Probability Test was used to establish statistical significance.[5] Multiple correlational analysis was used to test the impact of sets of independent variables on dependent variables.[6, 7]

END NOTES

[1]The B.C. Division of Vital Statistics provided a number of 1982 and
1983 statistics related to live births and their association with mother
and infant characteristics.

[2]"Current attendance and current non-attendance" refers to
participation in prenatal classes during the most recent pregnancy.

[3]Barbara S. Wallston, Kenneth A. Wallston, Gordon D. Kaplan and
Shirley A. Maides, "The Health Locus of Control Scale," Instruments for
Measuring Nursing Practice and Other Health Variables ed. Mary Jane Ward
et al (Washington, DC: US Government Printing Office, 1979): 1, 154 -157.

[4]Coast Garibaldi Health Unit, Coast Garibaldi Health Unit Annual
Report (1982).

[5]Sidney Seigel, Nonparametric Statistics for Behavioral Sciences (New
York: McGraw-Hill, 1956), pp. 42 - 47, 156 - 158, 96 104.

[6]William R. Klecka, Norman H. Nie, and C. Hadlai Hull, Statistical
Package for the Social Sciences Primer (New York: McGraw-Hill, 1975).

[7]Frank M. Andrews, Laura Klein, Terrance N. Davidson, Patrick
O'Malley, and Willard L. Rodgers, A Guide for Selecting Statistical
Techniques for Analyzing Social Sciences Data 2 ed (Michigan: Institute
for Social Research, The University of Michigan, 1981).

CHAPTER III

MAIN RESULTS

This chapter will, in more detail, describe the study mothers in terms of their sociodemographic characteristics and their prenatal class attendance pattern. It will then set forth the variables associated with the decision to attend classes. After that will come a description of the apparent effects of background and class attendance on health itself. These results will largely be presented in relation to the three study objectives listed in Chapter I.

An expansion of the sample description follows. An initial endeavour was given in the previous chapter in which the study sample was compared to the larger population of new mothers and infants in the 17 provincial health units.

Tables 12 and 13 give a profile of the study sample in terms of some sociodemographic characteristics.

TABLE 12

SOCIODEMOGRAPHIC CHARACTERISTICS OF SAMPLE

Characteristics	X	Range	S.D.
Maternal Age (years)	26.6	17-42	4.8
Maternal Schooling (years)	12.5	7-19	2.0
Parity	1.8	1-7	1.0
Household Size	2.2	1-9	0.9

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TABLE 13

SOCIODEMOGRAPHIC CHARACTERISTICS OF SAMPLE (continued)

Characteristic	n	%	
Where Born (mother)			
- Canada, U.S., U.K., Europe	163	92.6	n = 175
- Other	12	6.8	
Cultural Group (mother)			
- Anglo-Saxon, European	98	55.7	n = 113
- Other	15	8.5	
Primary Language			
- English	167	94.9	
- L. of China	2	1.1	
- Japanese	0	0.0	
- L. of India	4	2.3	
- European	2	1.1	
- Other	1	0.6	
Religion (mother)			
- Protestant	54	30.7	
- Catholic	21	11.9	n = 173
- Other	8	4.5	
- None	90	51.1	
Marital Status			
- Single	8	4.6	
- Married	150	85.2	
- Widowed	1	0.6	
- Separated	2	1.1	
- Divorced	3	1.7	
- Other, e.g. Common-law	12	6.8	
Occupation (mother)			
- Professional/Management	17	9.7	
- Technical	89	50.6	n = 123
- Service	17	9.7	
Major Wage Earner			
- Respondent	8	4.6	
- Husband/Partner	146	83.0	n = 174
- Mother/Father	4	2.3	
- Other	16	9.1	
Household Size			
- 2 persons	3	1.7	
- 3-4 persons	132	75.0	
- 5-9 persons	41	23.3	

*n's do not always total 176 because of missing data.

The preceding tables indicate that there was not a great deal of variability in the marital status, employment status and ethnic-cultural backgrounds of the sampled women. It is known that at least 85.2% of the sample mothers were married, 92.6% were western born, 94.9% used English as their primary language and 83% had partners who were the major wage earners. The group appeared somewhat more heterogeneous, however, in terms of age, education, parity, religion, mother's occupation and household size. There were, for instance, almost as many primiparous women (47%) as multiparous (53%). Likewise, variation is evident with regard to the educational levels of the women. Thirty-six percent had had better than 12 years of formal schooling and 12% less than 12 years.

Analysis of prenatal class attendance history of the sample women presents some interesting findings. It was assumed at the beginning of this study that the study sample would not be a homogeneous group of mothers with regard to the prenatal class factor. This assumption was initially supported when it was found that 56% (99) of the women had attended classes during their most recent pregnancy (current class attenders) and 44% (75) had not (current non-attenders). Examining the attendance factor further, however, it was apparent that 69% of the current non-attenders had attended classes during an earlier pregnancy. This meant that 86% (152) of the total sample had at one time or another attended prenatal classes (ever attenders) with only 14% (24) never having attended classes (never attenders).

As there is a difference in meaning between _current_ and _ever_ attendance, data analysis has been conducted keeping in mind the separate connotations of _current_ and _ever_ attendance.

The degree of class attendance by each current attender was also assessed. It was thought that in analyzing for possible associations of outcomes to class attendance that degree of attendance (i.e. percentage of the total class series attended) should be defined specifically.

Figure 3 shows the degree of prenatal class attendance for each type of class series, i.e. single series and split series ("Early Bird" series plus Third Trimester series).

FIGURE 3

DEGREE OF PRENATAL CLASS ATTENDANCE BY PARTICIPANTS

One Series Classes

100% Attendance
50 – 99% Attendance
< 50% Attendance
Attendance not reported
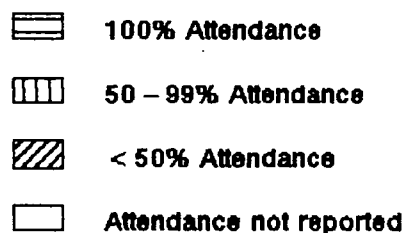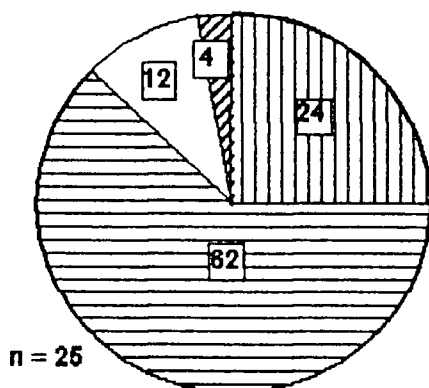
Split Series Classes

"Early Bird" Classes
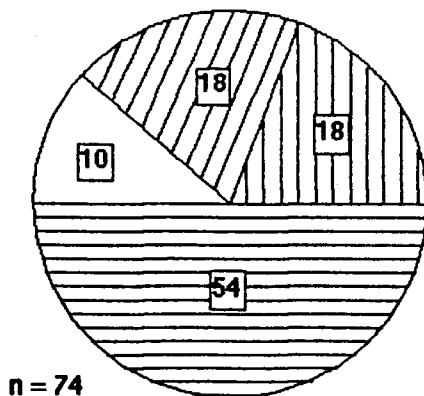
Third Trimester Classes
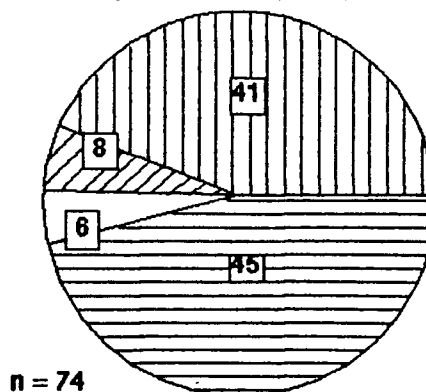
Size of class series attended by this of sample mothers varied from three to eight classes. Series of three class lengths were refresher/review series for multiparous women who had attended before, whereas the longer series entailed a full program as described in Chapter I.

At least 38% of the women attended three or more classes. Looking at percentage of class attendance it was found (see Figure 3) that a clear majority of women (72 to 85%) attended at least half of the classes. Forty-five to 62% attended all the classes. From this one might assume that most current attenders had a reasonable amount of exposure to prenatal class content through lecture and discussion as well as through receipt of resource materials such as the Baby's Best Chance and Perinatal Fitness Manual publications.[1] The latter publications are, as a rule, handed out to class participants during the first class so that even women who attend one or two classes only, have available to them the resource materials.

As the number of those known to have attended fewer than three classes is small - a total of eight women - analysis of the impact of degree of attendance on outcomes becomes statistically impractical. A larger sample size at the beginning might have eliminated this problem of small numbers. More important than sample size, however, would have been information on exposure to class content matched to specific classes attended. This was not ascertained in the study.

Current attendance for this study remains defined as any attendance at prenatal classes during the most recent pregnancy regardless of number of classes attended.

Chapter IV does describe in an indirect manner the classes which were attended by participants. What was actually asked of the mothers concerns

exposure to particular content areas. Mothers were asked if they learned anything new about an array of pregnancy-related topics. One of the predetermined responses to this question allowed a mother to indicate that a particular topic "was not covered in the classes I attended." From the responses, some insight is gained regarding degree of attendance. How such degree of attendance associates with health outcomes was not analyzed, however.

The responders to the question concerning attendance at private versus health unit classes indicated that a majority, 79%, attended health unit sponsored classes; 14% attended private classes; and 2% attended both types of classes. Five (5%) subjects provided no information on this matter. Figure 3 seems to indicate that attendance at both types of classes was actually larger than 2%. Why this was not supported by the above percentages derived from questionnaire responses is not understood. It is clear that most attenders did go to health unit classes, this probably because private classes were less available in all study locales.

Objective I

Findings will first be described in relation to Objective I of this study. That objective is:

TO DETERMINE WHICH FACTORS ARE RELATED TO THE

DECISION TO ATTEND OR NOT TO ATTEND CLASSES

What, in essence, is being sought is information on who the prenatal class attenders were in the study sample. What distinguished them with regard to their background characteristics from the non-attenders?

Tables 38 to 49 in Appendix K illustrate the variables that have an association with attendance at classes. Tables 38 to 41 present data from collapsed cross-tabulations, whereas Tables 42 and 43 give the simple correlation values(rs) between attendance and various mother characteristics.

By examining the aforementioned results of bivariate cross-tabulations and correlations, it is evident that current attendance, for the mothers of this sample, was associated with:

1) first pregnancy (e.g., low parity, small household size, no previous attendance)

2) existence of a support system (e.g., physician recommending classes, receiving encouragement from others to attend classes, talking to various persons about pregnancy, having available and using various sources of information on childbirth)

3) being western born and of an Anglo-Saxon or European background

4) having a regular visiting pattern with a physician.

Education and occupation has a less clear association with current attendance than some of the above factors. The data indicate that there is a tendency for women with middle level occupations (e.g., technical, clerical, sales) and with middle level education (11 to 12 years schooling) to attend classes more than those at the lower and upper extremes of these variables; that is, a higher percentage of women with these characteristics were attending classes.

Making regular visits to the physician or having a number of persons to talk to about pregnancy may not necessarily, of course, be precursors of current attendance as I am suggesting in points 2) and 4) above. They, in part, may be related to attendance as an outcome rather than as a determinant. It should also be noted that to the questions on the mother's

cultural history, only 113 out of 176 mothers responded. One cannot be certain who (in terms of culture) were the non-responders.

Factors that seem to have had little bearing on the decision to attend classes during the last pregnancy were mother's age; view of classes' purpose; awareness of classes (via advertising); general health status; pre-pregnancy diet, alcohol, smoking and exercise behaviour; religion; knowing other class attenders; transportation time to classes and sense of control over own health.

Concerning women who had ever attended classes, the data show that selection into prenatal classes with at least one pregnancy followed a similar pattern as selection into classes with the last pregnancy. Being married and having a partner as major wage earner are new factors that show association with ever-attendance. Educational status has a more linear relationship with ever-attendance than it did with current attendance. Years of schooling are postively associated with the former.

Specific characteristics of mothers found not to relate to ever-attendance are like those mentioned concerning current attendance. As well, parity; occupational status; and receiving encouragement to attend classes from others and/or a physician no longer appear important in predicting attendance.

In summary, then, selection factors found to be related to current attendance are primiparity, existence of a support system, western cultural background and regular visits to a physician. Except for parity and having classes recommended to one (defined as part of a support system), any attendance at classes is, also, associated with the above factors. In

addition, selection appears affected by marital status, having one's partner as major wage earner and being more educated.

Also examined were the information sources that women used during pregnancy. The purpose of this had been to gain a clearer picture of the type of women who are attending classes.

Pregnant women have the potential to receive information and gain knowledge about pregnancy, labour and childbirth, and childcare from many different sources. The study questionnaire gives examples of various sources of information. Summary Tables 14 to 19 explain which sources of information the study participants found most useful to them. They were each asked to name the two sources that were most helpful to them.

Appendix K, Tables 44 to 49 provide the detailed data from which Tables 14 to 16 are made.

TABLE 14

CURRENT ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON PREGNANCY

Current Attendance	Professional Sources*		Other Sources		
Yes	91	(70.5%)	99	(48%)	
No	38	(29.5%)	108	(52%)	
	129	(100%)	207	(100%)	336* (168 Mothers)

*336 = 168 mothers. Each mother cited two main sources of information on pregnancy.

$X^2 = 18.46$ p.   0.001

*Professional Sources – physician, physician's nurse, prenatal classes, public health nurse.

TABLE 15

CURRENT ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON LABOUR AND CHILDBIRTH

Current Attendance	Professional Sources		Other Sources		
Yes	92	(81%)	86	(40%)	
No	22	(19%)	128	(60%)	
	114	(100%)	214	(100%)	328 (164 Mothers)

$X^2 = 31.78$ p.   0.001

TABLE 16

CURRENT ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON CHILDCARE

Current Attendance	Professional Sources		Other Sources		
Yes	47	(64%)	139	(55%)	
No	26	(36%)	112	(45%)	
	73	(100%)	251	(100%)	324 (162 Mothers)

$x^2 = 1.8$ p.   not significant

Tables 14 and 15 indicate that the majority of respondents claiming professional sources of information on pregnancy and labour to be the most helpful sources are current class attenders.[2] Conversely, the respondents who claimed other than professional sources of information as the most useful tend to be those not currently attending classes.[3] Table 16 presents no significant differences in terms of information sources on childcare predicting current attendance.

TABLE 17

EVER ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON PREGNANCY

Ever Attendance	Professional Sources		Other Sources		
Yes	122	(95%)	168	(81%)	
No	7	(5%)	39	(19%)	
	129	(100%)	207	(100%)	336 (168 Mothers)

$x^2 = 12.8$ p. $\angle$ 0.001

TABLE 18

EVER ATTENDANCE BY MAIN SOURCES OF INFORMATION ON LABOUR AND CHILDBIRTH

Ever Attendance	Professional Sources		Other Sources		
Yes	121	(94.5%)	161	(80.5%)	
No	7	(5.5%)	39	(19.5%)	
	128	(100%)	200	(100%)	328 (164 Mothers)

$x^2 = 12.2$ p. $<$ 0.001

TABLE 19

EVER ATTENDANCE BY MAIN SOURCES OF INFORMATION CHILDCARE

Ever Attendance	Professional Sources		Other Sources		
Yes	66	(87%)	218	(88%)	
No	10	(13%)	30	(12%)	
	76	(100%)	248	(100%)	324 (162 Mothers)

$x^2 = 10.6$ p.   not significant

Tables 17 and 18 show that the majority of respondents who claim professional sources of information on pregnancy and labour as the most useful sources are those who attended classes at some point in time. The margin of difference is much less here than with current attendance. It might be assumed that "other sources" of information had gained in importance for ever-attenders because more have relied on increased experience (more multiparas) and on self-motivated study, e.g., reading (greater mass of older, more mature women).

Again, as with current attenders, the women's main sources of information on childcare cannot be used to predict ever-attendance at prenatal classes (Table 19).

That there was a relationship between women who tended to seek and use professional resources for the most pregnancy-related information and women who decided to attend prenatal classes is evident.

In accordance with Objective I's principal intent of finding the best predictors of prenatal class attendance, multiple correlations were carried out as a follow-up to the bivariate findings just presented. Several variables were found to be related to attendance, e.g., parity, educational status, MD recommendation, culture, and it is known that some of these are related to each other, e.g., parity and MD recommendation. It was necessary to look at groups of variables at once to see which individual ones have independent effects and to see how strong an effect they have. Table 20 shows the results of some of these multiple correlations.

TABLE 20

RESULTS OF MULTIPLE CORRELATIONAL ANALYSES: PRENATAL CLASS ATTENDANCE WITH PREDICTORS

	R	Multiple R	R$_2$	Signifance F
Current Attendance				
Low Parity	.521	.521	.271	.000
Physician Recommended	.473	.565	.319	.000
Small Household Size	.337	.566	.320	.000
Anglo-Saxon Culture	.281	.586	.343	.000
Received Encouragement from Others	.229	.596	.354	.000
Ever Attendance				
Frequency to Physician	.422	.422	.178	.000
English Language	.382	.517	.267	.000
Small Household Size	.352	.570	.325	.000
Anglo-Saxon Culture	.255	.573	.328	.000
Ever Attendance				
Frequency to Physician	.276	.276	.076	.000
English Language	.273	.355	.126	.000
Higher Education	-.248	.400	.160	.000
Partner Major Wage Earner	-.163	.442	.195	.000
Married	.156	.446	.198	.000
More People Talked To	-.141	.456	.08	.000

The joint impact of the factors involved in each of the above three analyses (Table 20) account for real but modest proportions of the variance in the attendance factor. A large proportion of the variance is still left unexplained. It is evident from the second multiple correlation involving "Ever Attendance" that the addition of four variables different from the first set for "Ever Attendance", did nothing to further explain it.

The two independent factors most predictive of current attendance in the available analysis are parity (r = 0.52) and physician recommendation (r = 0.47).

The selection factors of Table 20 are for the most part related to the socio-economic backgrounds of the respondents, e.g. frequency to physician, language, education. These cannot easily (or at all) be manipulated by prenatal class planners and educators. Implications of this will be discussed in the final chapter.

A Predictive Model of Current Prenatal Class Attendance

Up to this point, a number of variables have been examined for evidence of association with current prenatal class attendance. This has been done in an attempt to find predictors of class attendance. Low parity, for instance, is linked with attendance as are physician recommendation, receiving encouragement from others to attend, small household size, and Anglo-Saxon ethnicity. In order to see how variables such as these work together to predict current prenatal class attendance a path model has been constructed (Figure 4).

The paths depicted in Figure 4 derive from knowledge gained through the tabular and correlational analyses presented earlier. The path model is constructed in such a way that it accounts for "time", i.e., parity (pregnancy) comes prior to MD recommendation, as well, as obtaining direct and indirect effects of the chosen characteristics on attendance. The five characteristics used for the path analysis reflect the strongest variables related to current attendance. They are assumed to influence, not necessarily cause, current attendance.

FIGURE 4

**PATH MODEL SHOWING PREDICTORS OF CURRENT
PRENATAL CLASS ATTENDANCE.   COEFFICIENTS
(STANDARDIZED BETAS) REFER TO DIRECT EFFECTS ONLY**
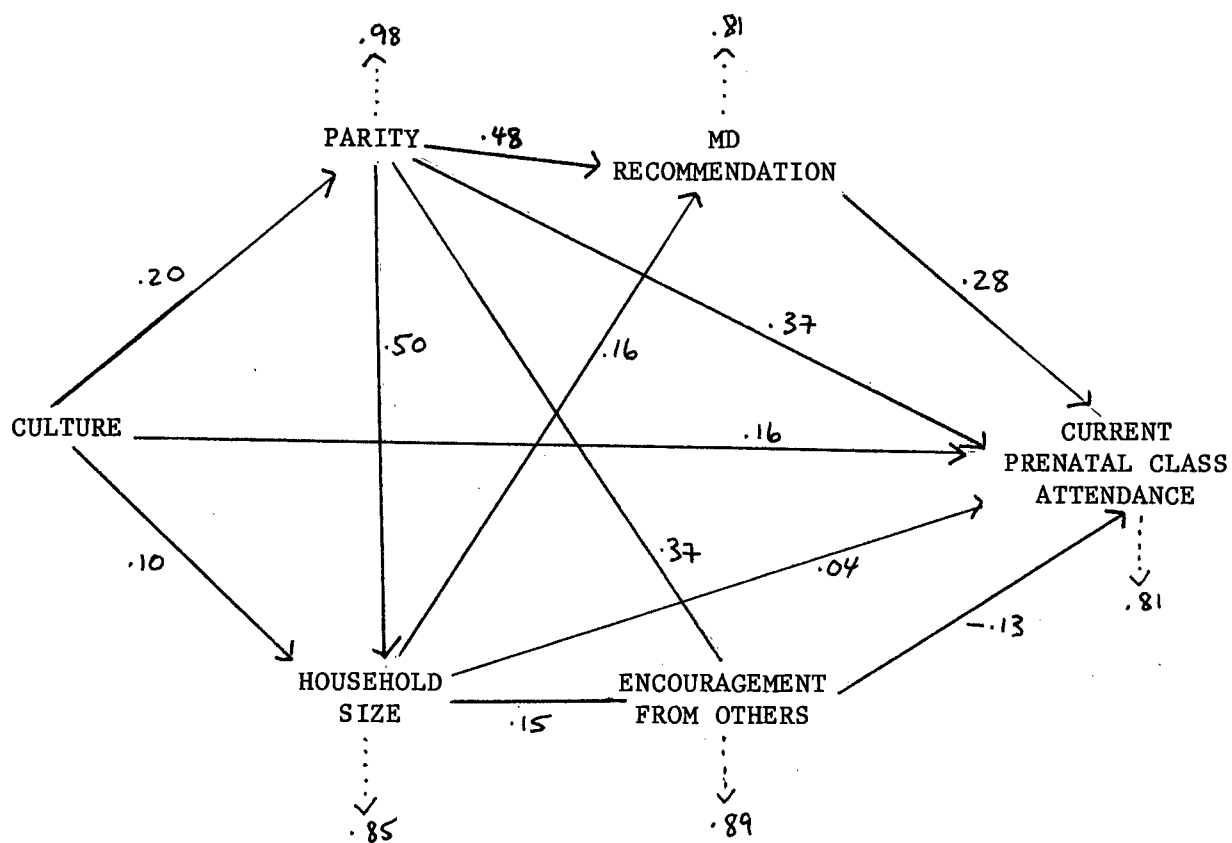
(n = 106 cases)

TABLE 21

PATH COEFFICIENTS FOR PATH MODEL
PREDICTING CURRENT PRENATAL CLASS ATTENDANCE

Variable Pairs	Total Covariance (A)	Direct (B)	Causal Indirect (C)	Total A + B (D)	Non-Causal (E)
Attendance, MD Recommendation	.47	.28	-	.28	.19
Attendance, Encouragement Others	.23	-.13	-	.13	.10
Attendance, Household Size	.34	.04	.06	.10	.24
Attendance, Parity	.52	.37	.24	.61	-.08
Attendance, Culture	.28	.16	.25	.41	-.13
MD Recommendation, Household Size	.41	.16	-	.16	.25
MD Recommendation, Parity	.56	.48	.08	.56	.00
Encouragement Others, Household Size	.34	.15	-	.15	.19
Encouragement Others, Parity	.45	.37	.08	.45	.00
Household Size, Parity	.52	.50	-	.50	.02
Household Size, Culture	.20	.10	.10	.20	.00
Parity, Culture	.20	.20	-	.20	.00

A path model, such as this, relies on path analysis for interpretation of the linear relationships contained within it. Path analysis has been described as "...superior to ordinary regression analysis since it allows us to move beyond the estimation of direct effects, which is the basic output of regression....."[4] It "...enables one to measure the direct and indirect effects that one variable has upon another."[5]

Appendix L indicates how the variables, that are part of the Figure 4 path model, were coded. For the variables class attendance, MD recommendation, encouragement from others, and culture underlying continuous scales are presumed.

Table 21 gives the data that form the basis of the path analysis.

The total variance that is explained for current prenatal class attendance by the path model is 34% $(1 - .81^2)$. The path coefficients show that most of this variance is explained by parity (total causal effects = .61) and culture (total causal effects = .41). Household size (total causal effects = .10) and encouragement from others (total causal effects = .13) are not good explanations or predictors of attendance.

Parity has a strong direct effect on current attendance unmediated by other variables, equalling .37. The link between parity and attendance is strengthened, however, through the variables MD recommendation (direct effects = .48) and encouragement from others (direct effects = .37) the former contributing the greater portion of the indirect effects (total indirect effects = .24). These findings, thus, say that current attendance is, in part, predicted by MD recommendation, which, in turn, is influenced by parity.

Stepping back in the path model to the mother's cultural group it is noticed that it, too, is a predictor of attendance. Culture's effect on attendance is enhanced when operating through intermediate variables. Culture, in fact, appears to gain most of its influence on attendance indirectly (indirect effects - .25) rather than directly (direct effects = .16). Parity is the variable which most strengthens culture's (direct effects = .20) relationship with current attendance.

This model appears to say that majority group status (Anglo-Saxon) when linked to primiparity influences a physician to recommend prenatal classes, which, in turn, affects a mother's decision to attend classes. Household size and receiving encouragement from others have a more limited affect on the decision to attend classes. Figure 5 illustrates the manner in which the significant paths are linked together. It must be remembered too, that each variable, individually, e.g., parity, has its own singular direct effect on attendance.

FIGURE 5

SIGNIFICANT PATHS TO CURRENT ATTENDANCE
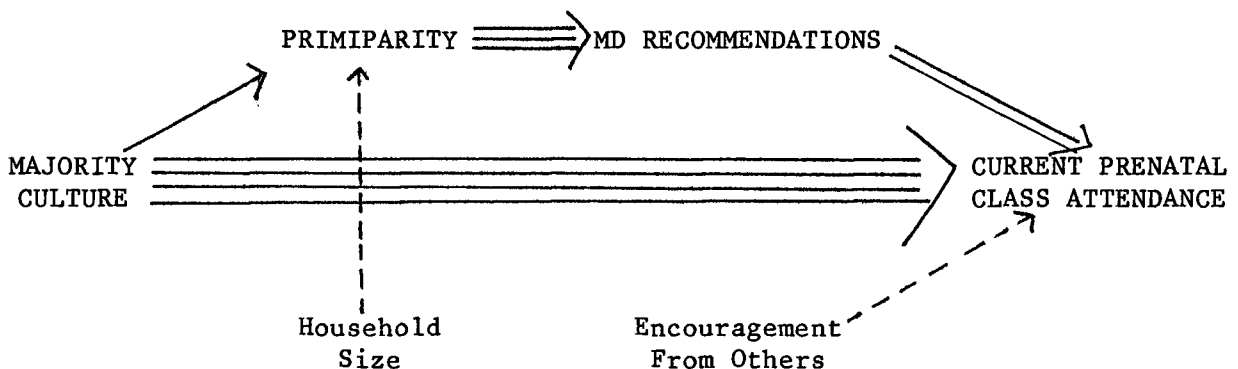
Limitations of a path model, such as the one here, must be recognized. It is important to recall that 66% of the variation in current attendance is not explained by this path model. Similarly, each component variable is affected mainly by factors situated outside the path model. By squaring the coefficient of alienation for the factor – encouragement from others $(.89^2)$ – for instance, one sees that 79% of the variation in this factor is not explained by the specified variables of this model. The model, therefore, is constrained by the variables chosen for its construction as well as by the manner in which the chosen variables were measured and coded. One would not expect high variance explained for current attendance with an analysis in which the individual woman is the unit of study.

One other point to mention is that there are a large number of missing cases in this particular analysis. One hundred and six cases out of a total of 176 were used. In hindsight, it is evident that "place of birth" would have been a better measure of ethnicity than "culture" because more mothers responded to the question concerning place of birth than did to the question concerning cultural background.

Despite some of the real problems of the described path model, it does assist in clarifying some of the underlying processes of influence between variables by measuring of indirect and direct effects.

Objective II

This objective proposes:

TO DETERMINE THE DIFFERENCES BETWEEN ATTENDERS

AND NON-ATTENDERS IN TERMS OF CERTAIN HEALTH-RELATED OUTCOMES

Evidence of associations between prenatal class attendance and health-related outcomes is part of what is being investigated with this study objective. A sub-objective is to examine variation among attenders and non-attenders.

In Appendix M are located bivariate cross-tabulation tables and correlations (Tables 50 to 53) that illustrate relationships between attendance and outcomes with varying degrees of statistical significance.

These data indicate that the following dependent variables were associated with current prenatal class attendance:

1.   Regular visits to physician.

2.   Use of labour breathing techniques.

3.   Infant complications.

4.   Complicated delivery mode.

5.   Maternal complications.

It was also found that there was a trend ($p = 0.05$) for current attendance to be related to:

6.   Perception of greater discomfort.

7.   Less smoking post-partum.

8.   Less breastfeeding.

9.   Larger birthweight.

Of interest is that some of the above findings did not occur in the desired (expected ?) directions. The current prenatal class attenders appeared to experience greater complications around the actual birth process and they seemed to be less prone to practising breastfeeding than non-attenders.

The dependent variables found to associate with <u>ever attendance at</u>
<u>prenatal classes</u> (Appendix M) were:

1.   Knowledge about diet and obesity in pregnancy.

2.   Use of labour breathing techniques.

3.   No definite plans concerning family planning.

4.   Regular visits to physician.

5.   Complicated mode of delivery.

Trends were evident in terms of:

6.   Knowledge about swimming during pregnancy.

7.   Knowledge about breastfeeding.

8.   More breastfeeding.

Again, some associations in the data occurred in the opposite
direction than would be expected. Complicated birth mode and lack of
family planning during the post-pregnancy period, for instance, were linked
to ever attendance.

The above summary results of bivariate analyses between prenatal class
attendance and health-related outcomes are of limited meaning as they
stand. To be meaningful, factors describing the attenders must be entered
into the picture as shown in Figure 1 of Chapter I. This is still to be
done.

In the interim, what can be said of the differences between class
attenders and non-attenders is that there are only a few significant
differences between the two groups of mothers and some of these outcome
differences are not of the desired sort.

Although there are some positive associations between health
knowledge/behaviour and class attendance, overall, knowledge and behaviour

were not significantly different for attenders and non-attenders. Nor did attenders indicate that they felt a greater sense of control over their health (locus of control) than did non-attenders.

The one health status measure - infant birthweight - appearing to be linked in a weak but positive way with attendance only did so with current attendance and under cross-tabular analysis (Appendix M, Table 50). Correlational analysis erased evidence of any relationship ($r = 0.0560$, $p = 0.462$). In the analyses conducted up to this point, thus, no significant positive health status differences are noted for class attenders.

Part of Objective II (the sub-objective) aims to identify differences in outcome within the attender group and within the non-attender group. From such findings, one might be able to determine if certain attenders/non-attenders have stronger links to particular outcomes than others. What is really sought is a description of who appears to benefit the most from attendance. Although benefit implies that a causal relationship is at work, it is recognized that causation cannot be inferred from the relationship seen in the cross-sectional (and retrospective) data cited next.

Five health-related outcomes are examined for their relationships with prenatal class attendance while controlling for some respondent characteristics. The referent cross-sectional data are located in Appendix M (Tables 54 to 69), show that the control variables chosen, here, appeared to have some effect on certain outcome measures. Figures 6 to 21 summarize the data from the tables and illustrate the key findings expressed in percentages. Tests for significance of differences were not

conducted. By looking at the percentages, however, it is possible to speculate upon which women class attendance appears to have the greatest effect in terms of certain outcomes.

Current attendance, for instance, appeared to have the greatest impact, with regard to encouraging women to use specific labour breathing techniques, on multiparous women of non-Anglo-Saxon ethnicity who have an average education (Figures 5, 6 and 7). Attendance at a minimum of three classes, also, seemed to make a difference (Figure 8). For this study's sample of women and for this particular outcome it appears that prenatal class attendance may have been least effective for primiparous Anglo-Saxon women of low or high educational backgrounds.

Figure 6
Labour Breathing Techniques by Current Attendance and Culture

	Anglo Saxon	Other Culture
	87.5 / 93	92 / 69
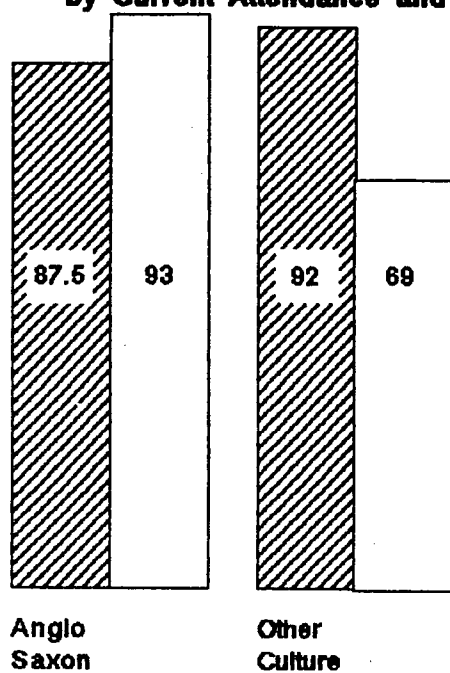
Figure 7
Labour Breathing Techniques by Current Attendance and Years of Education

	7 – 10 Years	11 – 12 Years	13 – 19 Years
	71 / 67	87.5 / 62	92 / 81.5
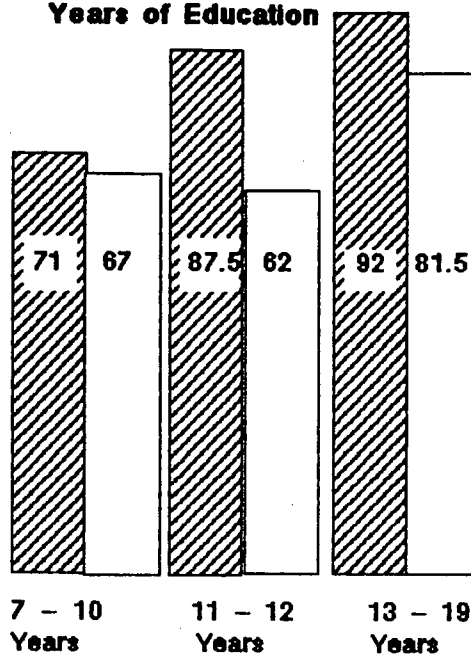
///// Current Attendance   ☐ Current Non – Attendance

Percentage Responders

Figure 8
Labour Breathing Techniques by Current Attendance and Parity

	Primipara	Multipara
	89 / 80	84 / 68
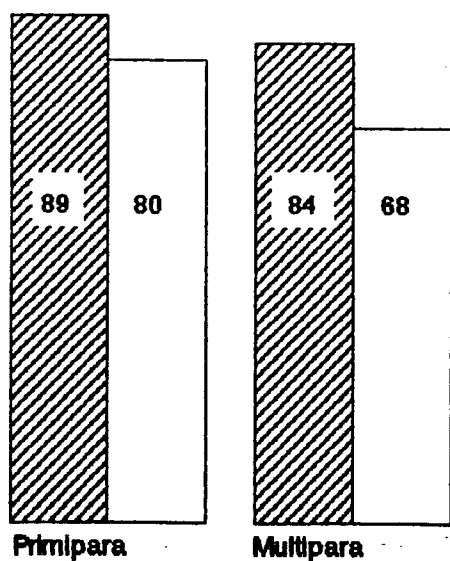
Figure 9
Labour Breathing Techniques by Number of Classes Attended

	5 – 16	3 – 4	1 – 2	None
	91	100	62.5	70

Number of Classes Attended
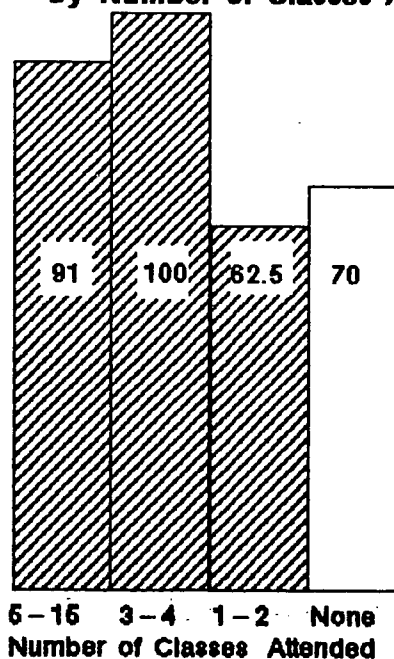
Used Labour Breathing Techniques

Figure 10
Infant Complications by
Current Attendance and Culture

| 97.5 | 75 | | 72 | 87.5 |

Anglo   Other
Saxon   Culture
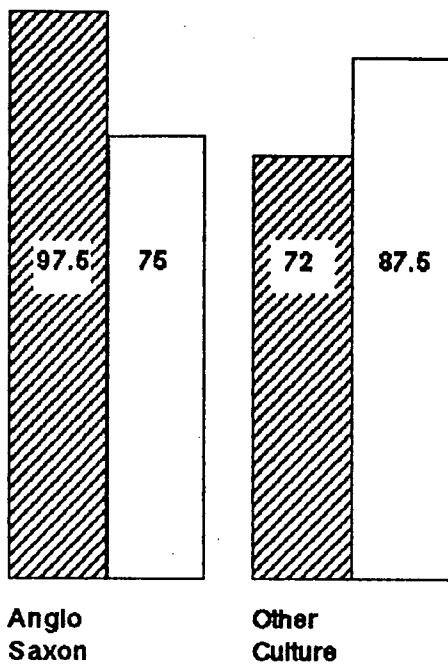
Figure 11
Infant Complications by
Current Attendance
and Age

| 70 | 86 | 72 | 83 | 100 | 100 |

< 20   20 – 29   > 29
Years   Years   Years
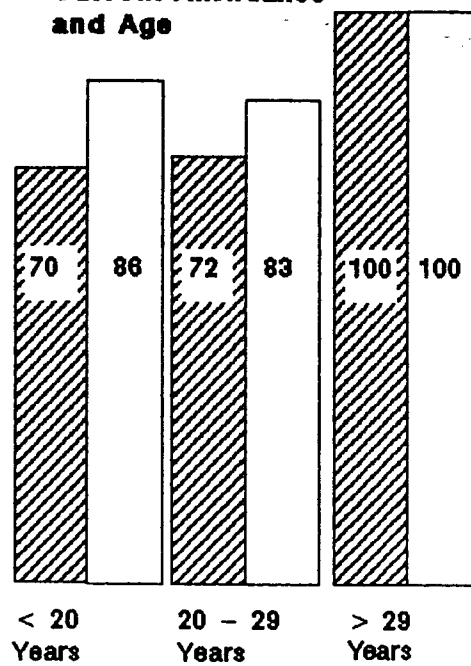
//// Current Attendance   ☐ Current Non – Attendance

Percentage Responders

Figure 12

Infant Complications by Years of
Current Attendance and
Education

| 43 | 87 | 73 | 94 | 76 | 74 |

7 – 10   11 – 12   13 – 19
Years   Years   Years
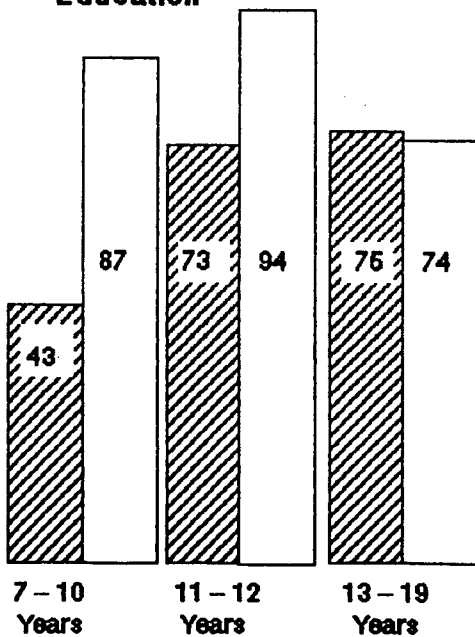
Figure 13

Infant Complications by
Current Attendance
and Parity

| 71 | 80 | 76 | 87 |

Primipara   Multipara
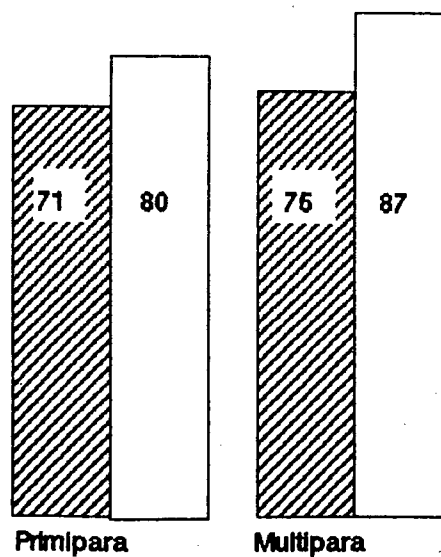
No   Infant   Complications

Figure 14
**Infant Complications by
Number Classes Attended**

68 | 85 | 75 | 86

5 – 15   3 – 4   1 – 2   None
Number of Classes Attended
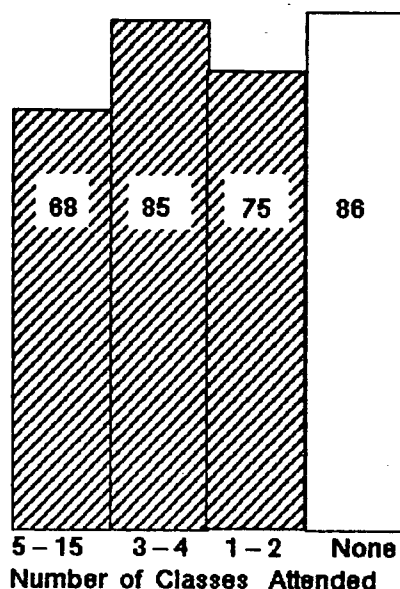
No Infant Complications

Figure 15
**Infant Birthweight by
Number Classes Attended**

88 | 100 | 87.5 | 80.5

5 – 15   3 – 4   1 – 2   None
Number of Classes Attended
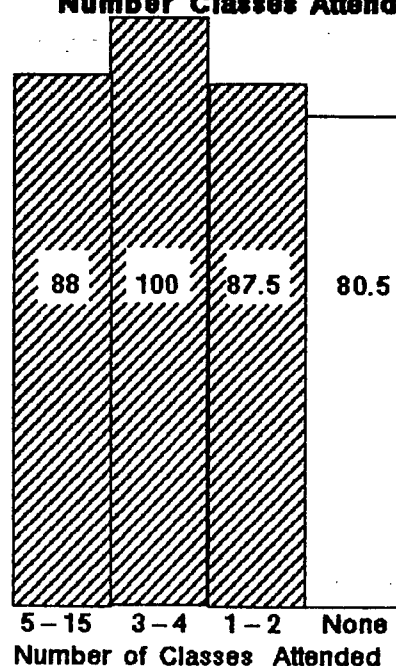
Infant Birthweight
> 3000 grams

▨ Current Attendance   ☐ Current Non – Attendance

Percentage Responders

Figure 16

**Labour Discomfort by
Number Classes Attended**

10 | 38.5 | 0 | 28

5 – 15   3 – 4   1 – 2   None
Number of Classes Attended
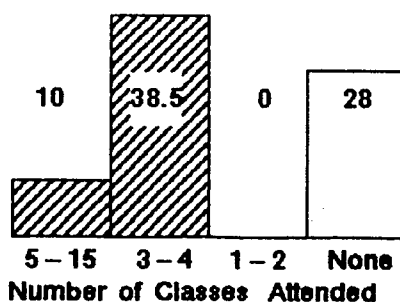
Perceived Labour
Discomfort

Figure 17

**Delivery Mode by
Number Classes Attended**

61 | 85 | 87.5 | 78

5 – 15   3 – 4   1 – 2   None
Number of Classes Attended
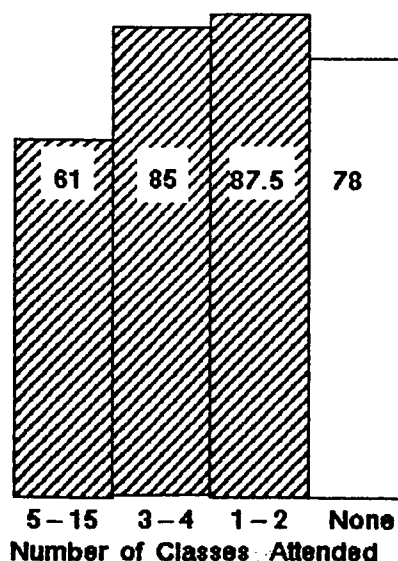
Spontaneous Vaginal
Delivery

Figure 18
Infant Birthweight by
Ever – Attendance and Culture

| 83 | 100 | 98 | 71 |

Anglo
Saxon

Other
Culture
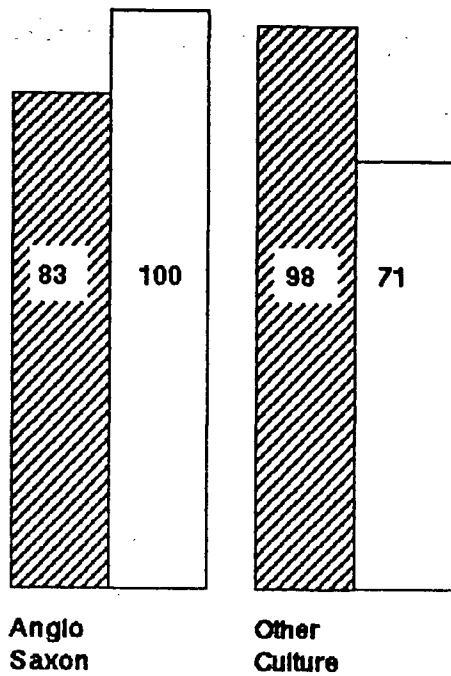
Figure 19
Infant Birthweight by
Ever – Attendance and Age

| 89 | 71 | 89 | 83 | 80 | 0 |

< 20
Years

20 – 29
Years

> 29
Years
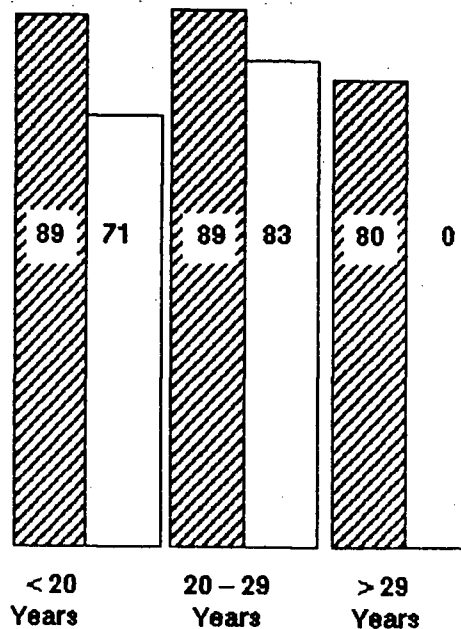
░░░ Ever – Attendance   ☐ Never – Attendance

Percentage Responders

Figure 20
Infant Birthweight by
Ever – Attendance and Years
of Education

| 92 | 78 | 88 | 60 | 89.5 | 80 |

7 – 10
Years

11 – 12
Years

13 – 19
Years
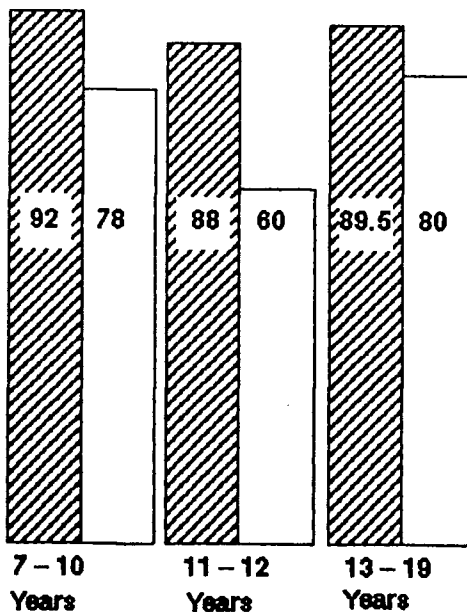
Figure 21
Infant Birthweight by
Ever – Attendance and Parity

| 85.5 | 75 | 92.5 | 67 |

Primipara

Multipara
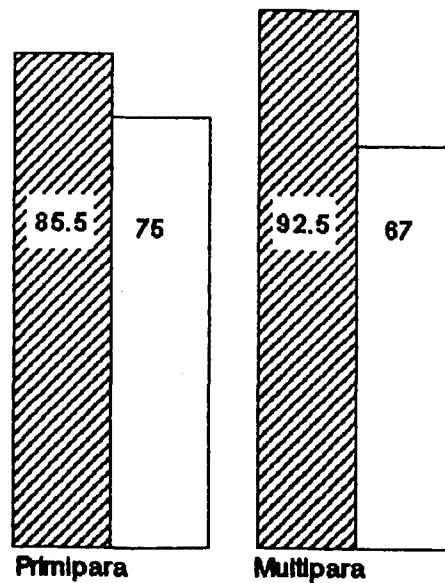
Infant Birthweight > 3000 Grams

Concerning presence of infant complications, the apparent trend was for current class attendance to be positively associated with it; conversely, the fewer classes attended, the more likelihood of having no infant complications. With regard to this outcome, the data predicted that those who might have the most to lose by attendance were non-Anglo-Saxon teenagers with minimal schooling (Figures 10, 11 and 12).

Optimal infant health is one of the key end goals of early prenatal education. Infant birthweight is one measure of infant health. In speaking of birthweight, Figures 18, 19, 20 and 21 show that it was the ever-attenders who were of minority group status, were under 20 years old or over 29 years old, were multiparous and had an averge education who seemed to gain more from their attendance than did other women.

In looking at Figure 15 there appears to be no discernible pattern linking degree of attendance to women's perception of labour discomfort. There is some indication that those who attended many classes (5 to 15) or just a few (1 to 2) experienced more labour discomfort than those who did not attend any classes at all or those who attended a moderate number of three to four classes.

The association of class attendance to mode of delivery is similar to that of attendance to presence of infant complications. In general, the fewer classes attended the better, although some class attendance may be better than none (Figure 17).

The findings just presented give one some idea of the manner in which prenatal class attenders differed from one another in terms of specific outcome measures; dependent possibly on variables such as cultural status, education, age, parity and degree of class attendance.

Objective III

This objective aims

BY WEIGHING THE EFFECTS OF VARIOUS FACTORS AND CLASS ATTENDANCE

HISTORY ON OUTCOME, TO DETERMINE WHAT (OR WHAT COMBINATION OF FACTORS)

IS THE MOST IMPORTANT DETERMINANT OF OUTCOME

The intention of this objective is to identify the best predictors of

outcome. Up to this point variables predicting prenatal class attendance

and non-attendance have been examined. As well, class attendance has been

examined as a predictor of health-related outcome. It is now, the

intention, to put these two sets of independent variables together in

various sets to see what the relative effects of each (all) of them are on

health-related outcomes. Attendance, thus, is being weighed against

culture, parity, etc., as a predictor of outcome.

The variable sets are made up of variables that showed significant

bivariate relationships in earlier analyses (Appendix K and M).

Analyses for this objective were performed first using "current

attendance" as one of the independent variables in four different variable

packages, and then using "ever attendance" similarily. Tables 22 and 23

show the results of these analyses.

Of interest is not only the cumulative effect of a particular set of

variables, but the determination of which variables within it are most

responsible for the variance in the outcome. From Table 22 it can be seen,

for instance, that the variable set chosen to predict delivery mode

explains only 6% of the variance in the latter; parity accounting for the

greatest amount of variance (.052), followed by current attendance (.006)

and cultural group status (.0005). The correlational analysis also shows

that delivery mode associates negatively with all three contributing variables, i.e., spontaneous vaginal birth is shown associating with multiparity, non-attendance and minority group status. The meaningfulness of the relationship of current attendance and majority group status with complicated birth mode, however, is highly questionable when one remembers that the former two variables account for less than one percent of the variance in delivery mode.

Examining another set of variables from Table 22, one sees that a lack of infant complications is explained partly by current attendance (.025), by the presence of maternal health problems (0.27) and by multiparity (.002). Together these variables contribute 5% of the variance of the outcome "no infant complications".

TABLE 22

RESULTS OF MULTIPLE REGRESSION ANALYSES: DETERMINANTS (INCLUDING CURRENT PRENATAL CLASS ATTENDANCE) OF OUTCOMES

	R	Multiple R	R^2	P-Value
Frequency to Physician				
Current Attendance	.304	.304	.092	.001
Cultural Group	.258	.354	.126	.001
Parity	.083	.363	.132	.002
Household Size	.077	.364	.133	.004
Maternal Health Problems	−.033	.365	.133	.009
Labour Breathing Techniques				
Parity	.251	.251	.063	?
Current Attendance	.176	.259	.067	.023
Cultural Group	.143	.273	.074	.040
No. Sources Used on Labour and Delivery	−.044	.273	.074	.080
Delivery Mode				
Parity	−.227	.227	.052	?
Current Attendance	−.177	.241	.058	.038
Cultural Group	−.079	.242	.058	.038
Infant Complications				
Current Attendance	−.157	.157	.025	.039
Maternal Health Problems	−.143	.227	.052	.011
Parity	−.120	.232	.054	.024

TABLE 23

RESULTS OF MULTIPLE REGRESSION ANALYSES: DETERMINANTS (INCLUDING EVER PRENATAL CLASS ATTENDANCE) OF OUTCOMES

	R	Multiple R	R^2	P-Value
Frequency to Physician				
Ever Attendance	.422	.422	.178	.000
Cultural Group	.258	.450	.202	.000
Marital Status	.115	.451	.204	.000
Language	.215	.452	.204	.001
Household Size	.077	.465	.216	.001
Labour Breathing Techniques				
Language	.389	.389	.151	.000
Ever Attendance	.307	.434	.189	.000
Cultural Group	.143	.434	.189	.000
No. Sources Used on Labour and Delivery	-.044	.435	.189	.000
Family Planning				
Ever Attendance	-.168	.168	.028	.080
Marital Status	.168	.263	.069	.022
Cultural Group	.134	.336	.113	.006
Frequency to Physician	-.082	.341	.117	.011
Education	-.054	.355	.126	.015
Language	.003	.355	.126	.029
Infant Feeding				
Education	-.199	.199	.040	.008
Age	-.187	.235	.055	.007
Ever Attendance	.127	.253	.064	.010
Marital Status	.067	.253	.064	.023

In assessing how a combination of four particular variables predict the use of specific breathing techniques during labour (Table 22), it is evident that 7% of the variance in the latter is accounted for by the former. The current attendance factor is responsible for only .004 of the variance when entered with the three other variables, while parity contributes .063 of variance and is the strongest predictor within this group of variables.

The frequency of respondents' visits to physicians should possibly not be belaboured because it is a doubtful outcome measure. In an earlier part of this study, in fact, "frequency of visits to the physician" is examined as a possible predictor of prenatal class attendance. It is, here, being looked at as a possible outcome of attendance. Perhaps it is a question of which comes first, or of health behaviour trait in general, thus, not easily solved. At this point, nevertheless, it is being treated as an outcome based on the assumption that class attenders are actively encouraged by their class teachers to seek regular medical attention during their pregnancies.

Moving on to Table 23, where "ever attendance" is examined as part of four variable sets, one can see that class attendance, here, just as in Table 22, is as might be expected, is more strongly associated with physician visits than with any of the other variables with which the latter is combined.

Turning elsewhere in Table 23, a respondent's primary language appears somewhat more influential in predicting use of labour breathing techniques (15% of the variance) than does ever-attendance which explains a further

49% of the variation. The other two variables of the set accounted for a negligible amount of the variance.

Thirteen percent of the variance in family planning decision-making is credited to the five factors described in Table 23. Never attendance is the best predictor (.028) with marital status (.041) and majority group status (.044) being second best predictors.

A respondent's decision to breastfeed her children was best predicted by her level of education (.04 of the variance), then, by her age (.025 of the variance) and next, by her prenatal class attendance history (.009). Marital status appeared to be of little consequence in the decision to breastfeed. The more educated respondents of older age who had attended classes at some point in time, however, had a greater tendency to breastfeed than did the other respondents.

Class attendance is of importance in predicting visits to the physician, infant complications and family planning, but other outcome measures are, evidently, better predicted by other variables such as parity, language and education. In no situation studied do any of the variables make large effects on the outcome variables.

A Predictive Model of Health Outcome

Through multiple correlation analysis certain health-related outcomes were shown to be predicted by particular sets of variables including prenatal class attendance.

To reiterate the findings related to the health outcome measure – absence of infant complications – it is seen that presence of maternal

health problems, multiparity and non-attendance at prenatal classes are minimally associated with absence of infant complications (Table 22).

A path model (Figure 22) was constructed 1) to include variables which primarily link the attendance factor to outcome and 2) to include pathways linking additional background variables to attendance as per the insights gained from the first path model constructed (Figure 4). This second path model may help in the understanding of the indirect and direct causal paths from background to outcome. The expectation is, therefore, that the way in which all these variables function together to effect the outcome may be clarified.

The manner in which the variables are coded for this path model is detailed in Appendix L.

The decomposition of the path coefficients, as written in Table 24, are important to the interpretation of the linkages seen between the variables of the path model.

The total variance that is explained by the path model with regard to the absence of infant complications is 6% (1 - .972). Infant complications are, thus only barely predicted by the factors which were measured.

FIGURE 22

PATH MODEL SHOWING PREDICTORS OF INFANT COMPLICATIONS (STANDARDIZED BETAS REFER TO DIRECT EFFECTS ONLY)
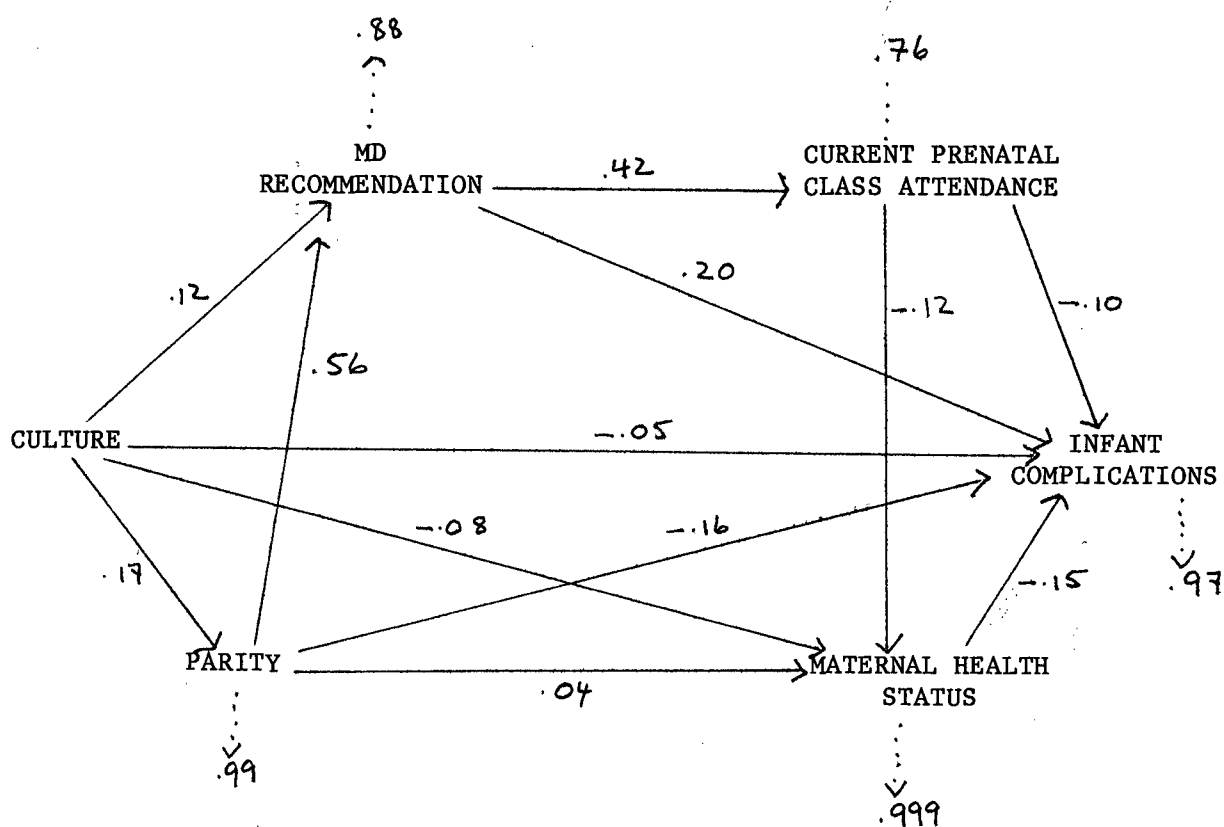
(n = 111 cases)

TABLE 24

PATH COEFFICIENTS FOR PATH MODEL
PREDICTING INFANT COMPLICATIONS

Variable Pairs	Total Covariance (A)	Direct (B)	Causal Indirect (C)	Total A + B (D)	Non-Causal (E)
Infant Complications, Current Attendance	-.09	-.10	.02	-.08	.01
Infant Complications Maternal Health Status	-.12	-.15	-	-.15	.03
Infant Complications, MD Recommendation	-.04	.20	.03	.23	.21
Infant Complications, Parity	-.11	-.16	.09	-.07	.04
Infant Complications, Culture	-.04	-.05	-	-.05	.01
Current Attendance, MD Recommendation	.49	.42	-	.42	.07
Maternal Health Status, Current Attendance	-.15	-.12	-	.12	.03
Maternal Health Status, Parity	-.03	.04	-	.04	.01
Maternal Health Status Culture	.11	-.08	-.05	-.13	.02
MD Recommendation, Parity	.58	.56	-	.56	.02
MD Recommendation, Culture	.23	.12	.10	.22	.01
Parity Culture	.17	.17	-	.17	-

The path coefficients in Table 24 indicate that most of the variation in the outcome measure is explained by physician recommendation to attend prenatal classes (total causal effects = -.23) and presence of maternal health problems (total causal effects = -.15). The manner in which these two variables operate to predict 3% of the absence of infant complications is not explained by the path model. How the presence of maternal health problems and a physician's recommendation to attend classes might correlate with absence of infant complications is not clear. Any possible explanation confirmed by the evidence that attendance at classes in turn, negatively influences absence of infant complications. Class attendance is seen to affect "presence" of infant complications in a minor way. Overall, both current attendance and cultural background were not strong predictors of this outcome.

Multiparity as a variable, unmediated by other variables, appears to have a fairly strong connection with the absence of infant complications (direct effects = -.16) but when modified by the other specified variables, e.g. class attendance and maternal health status (indirect effects = .09) its effect on the outcome is considerably weakened (total causal effects = -.07).

Clearly there are important variables missing in the causal chain outlined by this path model. Not only did the variables included in the model explain only a small proportion of the variation in the "infant complications" outcome measure, but the specified predictive variables themselves were only minimally explained by the other variables in the model, as shown in Figure 22.

A more inclusive model which would involve additional intermediate factors, such as, socio-economic status, nutritional status, age, frequency of contact with physician, length of gestation and use of drugs during pregnancy might be more meaningful in its prediction of infant complications. Such a model might clarify how it is that the absence of infant complications is influenced by various factors. It might explain the discrepancies in linkages between variables as were seen in the model as it stands now. How class attendance might relate to presence of infant complications whereas physician recommendation to attend classes are not explained by the path model, for instance.

Within the limits of variables used, however, it is clear that prenatal class attendance had no appreciable effect on the outcome "infant complications".

A third path model is located in Appendix N. This model utilizes "use of labour breathing techniques "as the dependent variable" and "Ever attendance" as one of the set of predictors.

END NOTES

[1]<u>Baby's Best Chance</u> (1979) and <u>Perinatal Fitness Manual</u> (1980) are two B.C. Ministry of Health publications available free of charge to all pregnant women in B.C. through local health units.

[2]"<u>Professional Sources</u>" is defined, for purposes of Tables 14 to 19, to include physicians, nurses, prenatal class teachers, and public health nurses.

[3]"<u>Other Sources</u>" is defined, for purposes of Tables 14 to 19, to include readings, media presentations, relatives and friends and personal experience.

[4]Herbert B. Ahser, "Causal Modeling," <u>Quantitative Applications in Social Sciences</u> 3 (1976): 34, 32.

CHAPTER IV

SELECTED FINDINGS RELEVANT TO PRENATAL EDUCATORS

The questionnaire used in this study was devised not only to survey responses relevant to the stated study objectives but, also to gain broader insight into the effectiveness of prenatal classes and other sources of "learning" for pregnant women. It is assumed that those involved in prenatal education, whether public health nurses or others, would be interested in knowing, for instance:

- Which subject areas are most discussed by (of interest to?) women during pregnancy?

- What do they report as their reasons for attending or not attending prenatal classes?

- What did they like/not like about going to classes?

- Did they find sources of information, other than prenatal classes, helpful? How did these information sources compare with prenatal classes?

On the following pages are the summarized findings to the above questions.

Subjects Women Talked About
During Their Pregnancy

Study participants were asked to describe what they talked about with

their relatives, friends, physicians, etc., during their pregnancy. One

hundred and sixty-three women responded to the question.

The women's topics of discussion were categorized into five subject

areas. Each is listed in Table 25 along with the percentage of respondents

admitting to having shared discussion, concerns and feelings within that

general subject area.

TABLE 25

SUBJECTS TALKED ABOUT DURING PREGNANCY

Subject Area	% Respondents
Prenatal Care	65%
Mental State	42%
Personal, Family Adjustments	33%
Labour, Delivery	30%
Infant Care	28%

n = 163

Prenatal care discussion focussed on practical issues, such as,

dealing with pregnancy-related discomforts, e.g. morning sickness; sex

during pregnancy; diet, exercise and alcohol intake in pregnancy.

A number of women (42%) talked about their anxieties, apparently, but

there were few specific examples given of these. Some did mention having

real fears about the possibility of deformity in their developing infants.

It is interesting to note that much fewer than 50% of the respondents

appeared to dwell on the personal/family adjustments to be made with the

arrival of a new child (33%) and on the actual care of the baby (28%). By and large it seems that subjects related to the pregnancy period, itself, are what captured the interest of most of the respondents rather than events related to the postpartum period of time.

Sources of Information Most Important
To Study Participants

Tables 44 to 49 in Appendix K describe in cross-tabular form the importance of various sources of information to responders. Table 26 provides a summary of this data in terms of current prenatal class attenders and non-attenders.

It is interesting to note that only 22% of attenders considered prenatal classes as a main source of information on pregnancy. They, as a group, rated both individual professionals and reading/media sources more highly as providers of useful information. Even fewer attenders (11%) considered classes to be a good source of childcare information. For learning about labour and delivery, attenders rated prenatal classes highest in usefulness among the various sources named.

TABLE 26

MAIN SOURCES OF INFORMATION IN PREGNANCY
BY CURRENT ATTENDANCE

Information Sources	Pregnancy Information Attendance (%)		Labour/Childbirth Information Attendance (%)		Childcare Information Attendance (%)	
	Yes	No	Yes	No	Yes	No
Prenatal Classes	22	6	34.3	0	11	0
Individual Professionals	26	21	17.4	14	14	9
Readings/Media	29	28	20.2	22	27	22
Partner/Relatives/Friends	15	20	16.3	19	29	20
Personal Experience	7	24	8.4	33	15	33
Other	1	2	3.4	12	4	6
	100%	100%	100%	100%	100%	100%
	(n = 169)		(n - 165)		(n = 165)	

Usefulness of the media or of reading materials did not appear to vary by the class attendance factor. They rated highest as sources of information about pregnancy.

Personal experience as a major source of information for non-attenders of classes is assumed to be so, because the majority of non-attenders are multiparas with experience of previous pregnancies.

Friends and relatives appear to be the favourite source of childcare information for class attenders.

Reasons for Attending Prenatal Classes

Current prenatal class attenders were asked to list up to four reasons for attending classes and then to identify the main reason.

From a total of 99 women attending classes, 89 presented one reason for attendance, 70 presented two reasons, 35 presented three and seven presented four reasons. The majority of attenders acknowledged one or two motives, only, for participation in classes.

The main reasons for attendance at classes are shown in Table 27.

TABLE 27

MAIN REASONS FOR PRENATAL CLASS ATTENDANCE

Reasons	% of Responding Attenders
Labour/Delivery Preparation	48
Overall Knowledge Gain	21
Healthy Pregnancy/Infant	14
Newborn Care and Information	0
Involvement of Husband/Partner	10
Sharing With/Support of Other Attenders	0
Other	7
	100%

n = 89

From examining Table 27 it appears that practical information and knowledge gain were the primary motives for class attendance. Review of all the reasons cited for attendance revealed that 57% of class participants went to classes for information and knowledge gain alone, 2% went for personal-social reasons, alone, and 41% went for a combination of reasons, i.e., knowledge and personal-social.

Main Reasons for not Attending Prenatal Classes

The reasons given why prenatal classes were not attended are summarized in Table 28.

TABLE 28

MAIN REASONS FOR NON-ATTENDANCE

Reasons	% of Non-Attenders
Positive Previous Class Experience	39
Practical Problems	20
Negative Previous Class Experience	5
Pregnancy and Birth a Natural Process	5
Reading Provided Information	1
Other	30
	100%

n = 77

By and large, it seems that a good proportion of current non-attenders (39%) felt that they had had a previous good experience with prenatal classes and that what was learned, then, would stand them in good stead with this latest pregnancy.

A good number (20%), also, stated practical problems to be the main deterrent to attendance. Examples of responses were:

"working long hours - own business"

"live out of city"

"I actively tried to get a refresher going but health nurse and others couldn't find a convenient time"

"too far away from home"

"babysitting arrangements"

Negative reaction to experience with previous class attendance were few. Example responses were:

"the movie turned me away"

"attended once previously. Can't simulate labour pains realistically in classes. Emphasized labour wasn't bad as all that and it was!"

A variety of the reasons given for not attending classes were not easily categorized into the arranged codes. These were termed "other". They are of interest as they reflect a high portion of the total main reasons given by respondents. Some are listed below:

"felt I didn't need to go"

"previous experience with pregnancy and labour"

"my husband wouldn't attend along with me"

"had an easy labour first time"

"expected to have a caesarian section"

"was in touch with doctor, maternity and public health nurses through my work"

"practised at home on my own. Informed myself privately"

Month of Pregnancy That Classes Were Begun

Pregnant women are encouraged by health units to begin prenatal class attendance during their first trimester of pregnancy; particularly primiparous women. Women wanting only to participate in refresher courses which concentrate on labour preparation do usually register somewhat later in pregnancy.

The data show, however, that the bulk of class attenders (at least 82%) were starting attendance beyond the first trimester even though 67% of attenders were primiparas only 18% of the attenders began their attendance during the first three months of pregnancy.

What Attenders Thought They Learned in Class

Table 29 details an array of subject areas that were typically discussed in a full series of prenatal classes. The abbreviated refresher classes, it must be noted, do not usually handle a list of subjects as comprehensive as this one.

Class attending mothers were asked if they learned anything about the topics listed in Table 29. Their were responses are given in the table.

One can see that more than half of the attenders claimed to have learned something new concerning exercise, labour (breathing techniques, process, hospital procedures), and managing the discomforts of pregnancy. Seventy-three percent, also, felt they had learned something from having had their specific questions answered. The latter is one fair measure of level of satisfaction with the classes.

TABLE 29

DID YOU LEARN ANYTHING NEW ABOUT ----?

Topics	Learned Something New	Didn't Learn Something New	Not Covered in Classes I Attended	No Response
Diet	36	47	8	8
Exercise	57	33	3	6
Labour Breathing Techniques	84	8		5
Managing Pregnancy Discomforts	52	29	11	7
Adjustment to Changes in Marriage Because of Pregnancy	28	33	26	12
Sexual Adjustment Because of Pregnancy	24	41	25	9
Adjustment for Fathers	45	25	18	11
Changes in Life After Pregnancy	42	34	14	9
Labour Process	71	19	1	8
Hospital Procedures - Labour	73	14	6	7
Caesarian Section	62	18	10	9
Family Planning	20	46	26	7
Infant Feeding	44	38	9	8
Other Infant Care	43	31	16	19
Answers to One's Questions	72	8	6	13

n = 99

The subject of diet or nutrition rates high in importance to the prenatal class teacher. This study finds, however, that far less than half

of the attenders (36%) thought they had learned anything new about nutrition.

What Attenders Liked About Classes

Class attenders of this study were given an opportunity to explain what it was they liked most about classes or about going to classes. Table 30 explains the findings.

TABLE 30

WHAT ATTENDERS LIKED MOST ABOUT CLASSES

Areas of Interest	No Mothers Mentioning Interest
Meeting Others	44
Labour Preparation	36
Overall Knowledge	12
Partner Involvment	12
Info on Lifestyle, Pregnancy Infant Development	6
Info on Newborn Care	1
Other	39

n = 99

(15 non-responses)

Meeting other attenders was not given as one of the main reasons for class attendance but one sees here that a good number of women benefited from the social aspect of class attendance.

Preparation for labour was not surprisingly one of the better liked aspects of the classes. However, having 36% of the attenders say they liked this part of classes may not be so reassuring when we remember that

48% cited labour preparation to be their main reason for attending classes (Table 27).

Evidently the codes chosen for the responses to this question of "what was liked" were not adequate for the responses given. A great many responses had to be classified "other", therefore. Examples from this category are as follows:

"the nurse ws very friendly and easy to talk to"

"discussing problems"

"able to ask questions and feel able to obtain knowledgeable answers"

"my husband and I really enjoyed the films...."

"reading materials supplied"

"I liked everything about the classes especially the good movies and pamphlets"

"teacher gave ··· a balanced view"

"I enjoyed it when a month old baby came for a visit at the class"

"the relaxed atmosphere and the instructor's ability to make it seem as if we were the only people having a baby. She generated excitement about the baby expected"

A great many of the responses in the "other" category referred to the teacher's behaviour in the prenatal classes.

What Attenders Did Not Like About Classes

Almost half of the attenders stated there were some aspects of prenatal classes that were not appreciated. Features of class content were the greatest source of criticism, with class style the second most.

Following are some examples of complaints about class content:

"too much time spent on exercises none of which were of any use to me

during labour"

"we had twins and there was no information to help us with our

questions"

"too much time on labour and breathing"

"needed more time on care of newborn"

"didn't pick up much new information"

"films ok but got too emotional"

"the films went into a lot of detail. Caesarian section really upset

me"

TABLE 31

WHAT ATTENDERS DID NOT LIKE ABOUT CLASSES

Things Not Liked	No. Mothers Responding
Class Content	20
Class Style	13
Inconvenience	3
Content and Style	7
Content and Inconvenience	1
Content, Style and Inconvenience	1
	45

(n = 99)

(54 non-respondents)

Concern about classroom style included:

"public health nurse came on very strong sometimes regarding diet, etc."

"there was one lady that had a C-section (and several miscarriages) before and she continued to talk about them through the whole class which was quite discouraging"

"less questions and answers and more structured discussion"

"too large - 26 couples"

"teacher's style. There because she had to be there?"

Inconvenience about classes' scheduling, distance, etc., was not apparently a problem to most class attenders. Three examples of perceived inconvenience are:

"inconvenience of the time. Too late, too long"

"I would like to see a babysitter for the older children ··· for mothers to come the second time"

"held too late at night"

Although the findings described in this chapter do not directly pertain to the three study objectives, they should nonetheless be an interest to prenatal educators. There was, for instance, for many of this study's class attenders the seemingly unexpected positive experience of meeting other expectant couples through class attendance. Communication with others sharing a similar experience appeared, in fact to be the aspect of class attendance most appreciated.

Prenatal classes, however, were clearly not the sole nor necessarily most important source of information during pregnancy.

Classes were pronounced very useful as a means of learning about labour and delivery but competed unfavourably with individual health professional support and reading/media information sources for others learning about the pregnancy and postpartum experience.

CHAPTER V

CONCLUSIONS

Commentary on Main Results

The meeting of Objectives I, II and III helps one to comment on and to make conclusions about the study hypotheses. The hypotheses state:

1. PRENATAL CLASS ATTENDANCE WILL AFFECT AND BE AFFECTED BY THE LEVEL OF KNOWLEDGE, HEALTH BEHAVIOUR, AND HEALTH STATUS OF MOTHERS.

2. THERE ARE SELECTION FACTORS WHICH INCLUDE HEALTH, EDUCATIONAL AND SOCIAL CHARACTERISTICS OF WOMEN THAT CAN BE USED TO PREDICT WHICH TYPE OF EXPECTANT WOMAN WOULD MOST BENEFIT FROM PRENATAL CLASS ATTENDANCE.

The first hypothesis states that attendance will be predicted/affected by the health knowledge, behaviour and health status of mothers. This is not generally supported by the study results. Attendance was more associated with the socio-cultural characteristics of mothers than by the above. Parity and maternal health status were the exceptions. Primiparity and presence of maternal health problems were somewhat predictive of prenatal class attendance.

The strongest predictor of prenatal class attendance was the active presence of the physician in a woman's support system. Both frequent physician visits and a physician's recommendation to attend classes correlated strongly with class attendance.

Did class attendance predict or affect certain health outcomes? Of the associations seen between attendance and outcomes, a number showed to be negative. Attendance, e.g., was associated with complicated birth mode, infant complications and maternal complications.

Objective II findings, however, showed some relationships between class attendance and positive outcomes. Attendance was seen to weakly link to knowledge of diet in pregnancy, knowledge about pregnancy, knowledge about breastfeeding, regular visits to the physician, use of labour breathing techniques, less smoking postpartum and larger birthweights.

No differences were noted between class attenders and non-attenders in terms of overall health-related knowledge and behaviour, however. Neither were there patterns, discernible, connecting levels of knowledge with specifically related behaviours. With regard to health behaviours, themselves, changes over a time period, i.e., from pre-pregnancy to post-pregnancy were not seen. There was no correlational support to indicate that levels of pre-pregnancy behaviour, e.g., mother's diet, had changed during pregnancy and post-pregnancy as a result of prenatal class attendance.

A mother's sense of control over her own health was assumed to be predictive of a health behaviour, such as prenatal class attendance; the mother with a strong locus of control being one to take actions, such as, attending classes, reading books, etc. Locus of control, as measured by the study questionnaire, however, was found to be no different for class attenders than for non-attenders.

Limited support for the second hypothesis comes from the data analysis conducted in relationship to Objectives II and III. It was seen, for

instance, that current attenders who were primiparous, were of a minority
ethnic background and had a higher education seemed more associated with
use of specific learned breathing techniques during labour. It was the
women who were multiparous, of minority ethnic background and had an
average education, however, who appeared to most benefit from attendance in
terms of use of labour breathing techniques (Figures 6 to 9).

Infant birthweight over 3000 grams is another possible measure of
benefit. There was a trend for those women who were multiparous, of
minority group status, under 20 years or over 29 years old, and who had an
average education to gain the most from class attendance (Figures 17 to
20).

With regard to these just described outcomes - use of labour breathing
techniques and infant birthweight - one gains a picture of a few of the
selection factors that might predict who benefits from classes. It is not
known if parity, ethnicity, age and education of mothers are
characteristics that could predict benefit in terms of other outcomes.

Data in Tables 22 and 23 provide some of the support for the
hypothesis that there are some selection factors determinant of benefit
from prenatal classes. In terms of breastfeeding, e.g., it is shown that
respondents who were older, married, highly educated, and had ever attended
classes were associated with breastfeeding their infants. Some benefit
seems to drive from attendance at classes. The factors, education and age
in this instance, however, are more strongly associated with breastfeeding
practise than is prenatal class attendance.

Overall, the hypotheses have not been well-supported by the study
findings, particularly with concern to identifying the type of expectant

women who might gain broad benefit from attending prenatal classes. In examining a wide spectrum of outcome measures related to health knowledge, health behaviour and health status, the majority lacked any significant association with class attendance or with selection factors.

Commentary on Other Findings

Chapter IV includes study results which are found to be outside the realm of the three study objectives. Although not a program (prenatal class) evaluation study, some of Chapter IV's findings constitute evaluative comment by class attenders. The latter were given the opportunity to provide opinion on how they valued prenatal classes. This was discussed in terms of their main reasons for attending classes, what it was they thought they had learned in classes, what they most liked about going to classes and what other sources of pregnancy-related learning they utilized.

There is some indication of consistency between the reasons given for prenatal class attendance and the actual subjects learned about in classes. Labour/Delivery preparation, for instance, was the most frequently mentioned main reason for class attendance (Table 27) with labour-related class content (labour proess, breathing techniques, hospital procedures, caeserian section) constituting the subject learned about by more women than any other subject (Table 29).

It should be remembered that any claims of learning by class attenders were not borne out by the forced-choice knowledge questions of the questionnaire. The latter, however, were not sufficiently detailed or

specific to be regarded as a test situation for evaluating whether actual learning had taken place in relation to the topics listed in Table 29.

Interestingly, as a reason for attending prenatal classes, the sharing with and receiving support from other class attenders, rated low compared to other reasons given. As discussed earlier, when one examines what it was that was liked most about going to classes one sees that more attenders cited the meeting of other class attenders as the aspect most liked about classes (Table 30). This illustrates that there are perhaps unforeseen or unplanned benefits derived from class attendance.

Labour preparation ran a close second to the meeting of other attenders, as an aspect liked about classes. This was fortunate as labour preparation was the main reason given for attending classes for most of this study's attenders.

Learning about the newborn and his/her care appeared to be the least appreciated part of class attendance. Across the board, from reasons for attendance, to what it was women thought they had learned, to what it was they liked the most about classes, the "newborn" as a subject did not rate highly with the majority of attenders.

Noticeable in the responses given regarding subject matter talked about during pregnancy, is the fact that a moderate number discussed their emotional state and the adjustments to pregnancy and life after pregnancy faced by themselves and their families (Table 25) one finds, though that for the majority of attenders, classes did not provide a positive mileau for learning about making adjustments as a result of pregnancy (Table 29).

Table 26 provides some significant insights into how classes are rated alongside other sources of information, in terms of usefulness. It is only

with regard to labour/childbirth information that classes were rated more highly, overall, than other sources of information. Individual professionals, e.g., physicians and nurses, and books, pamphlets and the media were more valued as providers of pregnancy information. For childcare information, prenatal classes rated particularly low as a source of information. Given that none of the attenders claimed learning about childcare to be a main reason for attendance, perhaps this finding is not as significant as the previous two just mentioned.

For prenatal educators it will be gratifying to see that the non-attending study respondents said that having had a positive previous class experience was what made a repeat attendance seem unnecessary to them (Table 28). Very few stated a previous negative experience with classes to be a reason for current non-attendance. Practical problems, a category of reasons for non-attendance, stood prominant among a fair portion (20%) of the non-attenders as a cause for not attending classes.

Examples of what was not liked about classes are also given in Chapter IV. As interesting as some of the responses given by attenders are, it is just as noteworthy to realize that over 50% of the attenders did not explain their difficulties with the classes (Table 31). The data in Table 29 shows that most attenders had learned nothing new abut many of the pregnancy-related subjects listed. The response by attenders to the question of what was not liked about classes, thus, was probably not as complete as it could have been.

Implications of Results for
Prenatal Educators

Findings from the study cannot legitimately be generalized to beyond the study population. Having tested for sample bias, however, and finding it to be minimal in terms of a number of mother/infant characteristics (Tables 1 to 4), implications of the study results are probably safely generalized to mothers in B.C. The information obtained in this study can hopefully be used to help in the planning, teaching and outreach efforts associated with prenatal classes.

The factors found to correlate with a decision to attend prenatal classes give educators an indication of who is not attending classes. Although findings do not establish causal links they lend some basis for greater outreach efforts that might be focussed upon women who are multiparous, have weak social support systems, are of ethnic minority group status, are unmarried and have had fewer years of schooling.

Physicians appear to have some influence in promoting prenatal class attendance particularly with western born primiparas. Attendance might become more broad-based, to include multiparas and ethnic minority groups, if physicians can be encouraged to foster class participation by these women.

Educators, themselves, need to recognize that often the classes they advertise do not spark the interest of the typical non-attenders. Although the socio-economic and health characteristics of these women are not for educators to modify, these women may see prenatal classes as relevant to their needs if they felt confident that the classes were not "white and middle class" in orientation. Seeing advertisements in their ethnic

newspapers and knowing that translations of readings are available, for example, may assure some women that efforts to include them are serious. Actions along these lines are already being made in the urban areas of the province and deserve to be tried in less populated areas, such as, is often being carried out with teenaged pregnant girls, already.

With a clear majority of the study's class attenders not starting attendance until after their first trimester of pregnancy, educators and physicians need to stress the importance of early attendance in their promotional efforts, if this is indeed a worthy goal.

Both attenders and non-attenders admitted to some practical problems associated with class attendance. Educators need to be aware of the practical impediments to attendance for mothers in their communities and need to be flexible in dealing with them. Attention may need to be paid to finding alternate times for classes, e.g., not just in the evenings. Distance rural women/couples may find it possible only to attend a class on an afternoon for instance.

Despite the fact that this study provides no proof of the effectiveness of classes in terms of causing changes in health knowledge, behaviour and status some associations between attendance and benefit were identified as described in Chapter III and the early part of this chapter. In a number of situations the attendance factor seemed to play a secondary role to personal socio-cultural charateristics but nonetheless appeared to be somewhat predictive, itself, of benefit. In general, however, it must be emphasized that client attendance played only a minor part in health-related outcomes.

Prenatal teachers would do well, though to recall some of the negative relationships found to exist between class attendance and labour/birth-related complications. A careful review of what is actually taught about labour and delivery, and how it is discussed with class participants seems advisable. The findings imply the possiblity of increased anxiety about labour among class participants.

That attenders did speak about concerns with both class content (Tables 26, 29, 31) and style of teaching (Table 31) makes it clear that teachers must elicit constant feedbak from their class members about these areas.

Suggestions for Future Research

Although this study has its strength chiefly as a descriptive survey of possible predictors of health outcome benefits, it has a number of faults.

The study's shortcoming are that it:

1. was retrospective rather than prospective

2. relied mainly on self-reporting by study participants. Accuracy of participants recall and objectivity of responses were not confirmed

3. utilized a non-experimental design

4. had hypotheses which were too broad

5. tried to examine too many outcomes

6. did not control adequately, for all the variables potentially effecting outcomes

7. did not adequately validate the questionnaire

As well, the theory underlying "causal processes" between class attendance, selection factors and varoius health-related outcomes were not clarified. The study's basic aim has been to find out who would most benefit from prenatal classes in terms of certain health outcomes. This actually translates into an attempt to find the best "causes" of health outcome. The study as it was conducted was unable to achieve this. One reason for this may be that very possibly the wrong outcome measures were used, e.g., birthweight. It is probably very dubious that class attendance would have any effect on birthweight, for instance.

Some suggestions for future research projects are:

1. to conduct a quasi-experimental prospective study of pregnant women taking some baseline measures of their health knowledge, behaviour and status before a decision to attend or not to attend classes is made. Socio-economic characteristics would be measured at the start as well. A true experimental study is impractical.

2. to develop clearer, more reliable measures of independent and dependent variables, i.e., less reliance on self-reporting. Study participants could be tested for knowledge of various stages, e.g., pre-attendance, during attendance and post-partum. Maternal health status, e.g., could be measured partly as reported by the participant and partly as reported by her physician. Class attendance, itself, could be defined more precisely during analysis, in terms of specific content covered in the classes attended. Actual number of classes attended is probably meaningless as a variable without knowing the type of content addressed in the classes attended.

3. to narrow the hypothesis focus to one or two benefits. One could

    limit the outcome focus for instance, to health knowledge and health

    behaviour as it relates to e.g., breastfeeding. An assessment of

    health knowledge and behaviour change would be a practical focus as

    these are areas more amenable to class instruction.

4. to conduct a more extensive pilot study for the purpose of better

    testing the reliability of the questionnaire as a tool, as well as,

    its sensitivity, and acceptability to a study sample.

5. to attempt to root out the causal process between independent

    variables and the dependent variable by more extensively using the

    path analysis technique. To elucidate more carefully the possible

    factors associated with the dependent variable through more extensive

    and concentrated literature review.

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APPENDIX A

SAMPLE BIRTH NOTICE

Do not use	Province of British Columbia MINISTRY OF HEALTH – DIVISION OF VITAL STATISTICS	PHYSICIAN'S NOTICE OF A LIVE BIRTH OR STILLBIRTH	Do not use

NAME OF FATHER (Surname)	(Given names)	If parents legally married to each other, is father non Indian ☐ or registered Indian ☐

NAME OF MOTHER (Maiden surname)	(Given names)	AGE	If parents not legally married to each other, is mother non Indian ☐ or registered Indian ☐

PERMANENT ADDRESS OF MOTHER	(House No.) (Street)	(City or Municipality)	Postal Code	Was child born alive? ☐ Yes ☐ No

PLACE OF BIRTH	(Name of Institution)	(Location)	Office Use Only

DATE OF BIRTH	Hour ___ a.m. p.m.	Day	Month	Year 19	Male ☐ Female ☐	Apgar Score at: 1 min. ___ 5 min. ___	Single ☐ Twin ☐ Triplets ☐

BIRTH WEIGHT ___ grams	Gestation period ___ weeks	Total pregnancies	Total live births	Total stillbirths	Total abortions (Spont. & induced)

What special measures (if any) were taken to promote respiration? | If stillborn, did death occur before labour ☐ or during labour ☐

Mode of delivery: Spontaneous vertex ☐ Forceps vertex ☐ Breech ☐ Caesarean 1st ☐ 2nd + ☐	Other operative procedure (specify): _____

Abnormality (major or minor) or pathology of infant: No ☐   If yes, describe:_____

Complications of pregnancy, labour or delivery: No ☐   If yes, describe:_____

Physician's signature   Physician's address   Date:

PLEASE REMOVE CARBON BEFORE MAILING   FORM V.S. 3

APPENDIX B

STUDY QUESTIONNAIRE

APPENDIX B(a)

QUESTIONNAIRE: EXPLANATION & INSTRUCTIONS

1. Unless it is stated otherwise, the questions refer to your experiences with your last pregnancy.

2. Answer each question from your own experience. There are no right or wrong answers.

3. Where there are blanks (_____) written next to possible answers, please use a check(s) for your answer(s).

4. Please take note that in the middle of the questionnaire there is a separate set of questions for women who have attended any kind of prenatal classes (14 to 31), and another set of questions for women who have not attended prenatal classes 32 to 39).

APPENDIX B(b)

NOTICE FOR SUBJECTS RECEIVING
MAILED QUESTIONNAIRE

THIS IS AN IMPORTANT PIECE

OF INFORMATION.   IF THE

PERSON TO WHOM THIS IS ADDRESSED

DOES NOT READ ENGLISH, PLEASE

FIND SOMEONE WHO DOES READ ENGLISH

TO HELP HER COMPLETE THE

ANSWERS TO THE QUESTIONS

APPENDIX B(b)

NOTICE FOR SUBJECTS BEING INTERVIEWED

THIS IS AN IMPORTANT PIECE

OF INFORMATION.   IF THE

PERSON TO WHOM THIS IS ADDRESSED

DOES NOT READ OR SPEAK ENGLISH,

PLEASE PHONE ME (OR LEAVE A

MESSAGE) at 228-6765

BETWEEN 8:30 A.M. AND 4:30 P.M.

THANK YOU.

MARY SPOKE

No: _____

APPENDIX B(d)

QUESTIONNAIRE

Questions 1 to 55 will mainly be about the time during your pregnancy

---

1. On what date was your baby born?   Day _____   Month _____
    Year _____

2. Including this past pregnancy, how many pregnancies altogether, have
    you completed? _____

3. Who did you talk with (share your feelings and concerns with) the most
    during your pregnancy? Give relationship to you (for example,
    husband, mother, physician, friend, public health nurse, neighbour),
    not name(s).

    _____

    _____

    _____

4. What did you talk about with the person(s) listed in question 3?

    _____

    _____

    _____

    _____

    _____

5. Women get information on how to care for themselves during pregnancy
    from many sources. Which of the following sources of information did
    you use during your pregnancy? (Check all you used.)

    Husband   _____
    Relative (other than husband)   _____
    Friend/neighbour   _____
    Doctor   _____
    Doctor's office nurse   _____
    Prenatal classes   _____
    Public Health Nurse   _____
    Reading material from doctor and/or health unit   _____
    Other reading material (e.g., books, magazines)   _____
    T.V. and radio   _____
    Previous peronal experience   _____
    Other (specify) _____   _____

    Please go back and circle the two sources of information that were
    most helpful to you.

6. Women get information on <u>labour and childbirth</u> (regular and Caesarean section) from many sources. Which of the following sources of information did you use during your pregnancy? (Check all you used.)

Husband   _____

Relative (other than husband)   _____

Friend/neighbour   _____

Doctor   _____

Doctor's office nurse   _____

Prenatal classes   _____

Public Health Nurse   _____

Reading material from doctor and/or health unit   _____

Other reading material (e.g., books, magazines)   _____

T.V. and radio   _____

Hospital tour   _____

Previous peronal experience   _____

Other (specify) _____   _____

Please go back and circle the two sources of information that were most helpful to you.

7. Women get information on <u>child care</u> from many sources. Which of the following sources of information did you use during your pregnancy? (Check all you used.)

Husband   _____

Relative (other than husband)   _____

Friend/neighbour   _____

Doctor   _____

Doctor's office nurse   _____

Prenatal classes   _____

Public Health Nurse   _____

Reading material from doctor and/or health unit   _____

Other reading material (e.g., books, magazines)   _____

T.V. and radio   _____

Previous peronal experience   _____

Other (specify) _____   _____

Please go back and circle the two sources of information that were most helpful to you.

8. Did you see a doctor about your pregnancy any time before your delivery?   Yes _____   No _____

9. In which month of your pregnancy did you first see a doctor about your pregnancy?   _____

10. How often did you visit a doctor during your pregnancy?

    _____

11. During your pregnancy were you being treated for any health problem (for example, diabetes, high blood pressure, depression)?

    No   _____

    Yes   _____

    Specify   _____

12. Did your doctor say anything about prenatal classes?

    _____   He did not mention classes

    _____   He recommended that I attend classes

    _____   He recommended that I not attend classes

    _____   Other (specify)   _____

13. Did you attend any prenatal classes during this past pregnancy?

    No _____   Yes _____

    If "yes", continue to question 14.

    If "no", skip to question 32

14. Which classes did you attend?

    _____   classes given by a provincial Public Health Unit

    _____   other classes (specify)   _____

    _____

15. How did you hear about the classes you attended?

    _____

    _____

    _____

16. Did any person(s), other than a doctor, actually encourage you to attend classes?

No _____ Yes _____

If "yes", answer to question 17.

17. Who or what encouraged you (relationship to you, not name)? Circle the person or thing that was most important in getting you to attend classes.

_____

_____

_____

18. Have you ever attended prenatal classes before?

No _____ Yes _____ If yes, when (year)?

If "no", answer to question 19.

19. Did you personally know anyone who attended classes before you decided to attend classes?

No _____ Yes _____ Specify: _____

20. People have different reasons for attending prenatal classes. Would you tell me your specific reasons for attending classes? List up to four reasons. Check ( ) the main reason if there is more than one reason.

_____

_____

_____

_____

_____

_____

_____

21. In what month (e.g., third month) of pregnancy did you begin to attend prenatal classes?

_____

22. Some classes are split into two series (for example, an Early Bird or Head Start series in early pregnancy, followed by a Labour Preparation series in later pregnancy). Other classes are offered as <u>one</u> series of classes. Please check the <u>type</u> of series you attended and indicate the <u>number of classes</u> you actually attended.

_____ <u>One</u> series classes: I attended _____ out of _____ classes

_____ <u>Two</u> series classes:

   1st series: I attended _____ out of _____ classes

   2nd series: I attended _____ out of _____ classes

If you did not attend all of the classes in your series, please answer question 23.

23. What were your reasons for missing some classes?

_____

_____

_____

_____

24. Did your husband/partner attend any classes with you?

No _____   Yes _____

25. Did someone close to you other than a husband/partner (for example, mother, girlfriend) attend classes with you?

No _____   Yes _____

26. Did you <u>learn anything new</u> about the following things from the lectures and discussion in classes? Please place checks in the appropriate columns.

	Learned something new	Did not learn anything new	Was not covered in the classes I attended
Eating a balanced diet during pregnancy			
Exercise during pregnancy			
Breathing/relaxation techniques for labour			
Managing common discomforts of pregnancy			

	Learned something new	Did not learn anything new	Was not covered in the classes I attended
Adjusting to changes in marriage because of pregnancy			
Adjusting one's sexual life to pregnancy			
Preparing other chidren for new baby			
Helping father of baby to get ready for parenthood			
Preparing for changes in one's life after baby comes			
What labour is all about			
Hospital procedures during labour			
Preparing for possibility of a Caesarean section			
Family planning after pregnancy			
Feeding the baby			
Caring for the baby, e.g. bathing, immunizations			
Whatever questions one had			

27. What did you like most about the classes or about going to the classes? Describe:

_____

_____

_____

_____

_____

_____

28. As a result of going to classes did you, outside of class time, make contact with (phone, visit) anyone who attended your classes?

No _____   Yes _____

Explain if you wish: _____

_____

29. Was there anything you did not like about the classes or going to the classes?

No _____ Yes _____

Describe:

_____

_____

_____

_____

_____

_____

30. How long (in minutes) did it take you to get to the classes from home? (Approximately)

_____

31. How did you get (transport) yourself to the classes (e.g., walk, car, bus)? Be specific?

_____

_____

_____

Skip to question 42.

_____

Questions 32 to 41 are for women who have not attended prenatal classes during this past pregnancy.

_____

32. During this past pregnancy, did you know whether prenatal classes were being offered by

- the Public Health Unit?   No _____   Yes _____
- Others?   No _____   Yes _____

33. If you know about prenatal classes being offered through the Public Health Unit, how did you hear about them?

_____

_____

_____

34. Have you ever attended prenatal classes before?

   No _____   Yes _____   If yes, when (year)?

   If "no", answer question 33.

35. Did you personally know anyone who attended classes?

   No _____   Yes _____   Specify: _____

   _____

36. Did any person(s) actively <u>encourage</u> you to attend prenatal classes?

   No _____   Yes _____   Specify: _____

   _____

37. Did any persons(s) actively <u>discourage</u> you from attending prenatal classes?

   No _____   Yes _____   Specify: _____

   _____

38. During the time of your pregnancy what did <u>you</u> see as the purpose of prenatal classes?

   _____

   _____

   _____

   _____

   _____

39. People have different reasons for not attending prenatal classes. Would you tell me what your <u>main</u> reason(s) was(were) for not attending classes? List up to four reasons. Check ( ) the main reason if there is more than one reason.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

   _____

40. How long (in minutes) would it likely take you to get to your nearest Public Health Unit?

_____

41. What, if any, transportation is available to you

   - in the daytime?   _____

   - in the evenings?   _____

Continue on with all the questions.

---

42. <u>Before</u> this past pregnancy, did you smoke?

   No ___   Yes ___   If yes, average number of cigarettes per day ____

43. Did you smoke <u>during</u> the pregnancy?

   No ___   Yes ___   If yes, average number of cigarettes per day ____

44. What would best describe the amount of exercise you had immediately <u>before</u> this past pregnancy (for example, sports, brisk walking, runnning, exercise class)?

   _____ None   _____ Less than once a week

   _____ Once or twice a week   _____ Three or more times a week

   Describe specifically _____

   _____

45. <u>During</u> this past pregnancy how much exercise did you have (for example, sports, brisk walking, runnning, exercise class)?

   _____ None   _____ Less than once a week

   _____ Once or twice a week   _____ Three or more times a week

   Describe specifically _____

   _____

46. <u>Before</u> this past pregnancy how much alcohol did you drink?

   None _____

   Some _____   Average number of drinks per week _____
   (1 drink = 1 bottle beer or 1 glass wine or 1 shot of spirits)

47. <u>During</u> this past pregnancy how much alcohol did you drink?

    None _____

    Some _____   Average number of drinks per week _____
    (1 drink = 1 bottle beer or 1 glass wine or 1 shot of spirits)

48. How much weight did you gain during this past pregnancy?   _____

49. How would you rate your diet (the food you ate) <u>before</u> and <u>during</u>
    pregnancy? Please check (   ) one answer under each column:

    <u>Before pregnancy</u>   <u>During pregnancy</u>

       - not too good   - not too good

       - adequate   - adequate

       - excellent   - excellent

50. How many servings of milk or equivalent (e.g., 1 cup yogurt, 1½ oz.
    cheese, 1 tin sardines) did you drink/eat on average per day, during
    pregnancy?

    _____

51. Did you use special breathing techniques during your labour and
    delivery?

    No _____   Yes _____   (If yes, please answer question 52)

    Describe: _____

    _____

    _____

52. Where did you learn the breathing techniques that you used during
    labour and delivery?

    _____

    _____

    _____

53. Overall, how would you describe the level of discomfort you felt
    during labour and delivery?

    _____   minimal   ) Explain if you wish: _____

    _____   moderate   ) _____

    _____   severe   ) _____

54. Besides the breathing and relaxation techniques that you may have used during labour and delivery, what else did you use to prevent or reduce discomfort and pain?

_____ nothing

_____ medication by mouth or by injection

_____ anaesthetic (for example, spinal (epidural) anaesthetic, general anaesthetic, anaesthetic given by yourself through a mask).

_____ other   Explain: _____

_____

Questions 55 to 69 are about the time since your delivery.

55. Are you smoking now?

No ___   Yes ___   If yes, average number of cigarettes per day ____

56. How much alcohol do you drink now?

None _____

Some _____   Average number of drinks per week _____
(1 drink = 1 bottle beer or 1 glass wine or 1 shot of spirits)

57. How would you rate your diet (the food you eat)? Please check ( ) one answer.

_____ not too good

_____ adequate

_____ excellent

58. What would best describe the amount of exercise you get now (for example, sports, brisk walking, running, exercise class)?

_____ None   _____ Less than once a week

_____ Once or twice a week   _____ Three or more times a week

Describe _____

_____

_____

59. How are you feeding your baby?

_____ Bottle feeding   _____ Breastfeeding

_____ Both bottle feeding and breast feeding

_____ Other   Explain: _____

_____

60. If you are breastfeeding, for how long do you plan to breastfeed
(approximate number of months) _____? Are there any reasons that
might cause you to stop earlier than you plan?

No ____ Yes ____ Explain: _____

_____

61. How often will you take your baby for check-ups (e.g., doctor's
office, Public Health Unit)?

_____ Only if sick

_____ Other   Explain: _____

_____

_____

62. Will you have your baby immunized?

_____ No   Explain why: _____

_____

_____ Yes   Explain why: _____

_____

63. At what age do you plan to have your baby first immunized? _____

64. Has a public health nurse visited you in your home since the birth of
your baby?

_____ No   _____ Yes

65. Have you any plans concerning family planning/birth control?

_____ No   _____ Yes

Please explain: _____

_____

_____

66. Which person(s) do you talk to the most about caring for your baby (for example, husband, mother, friend, public health nurse, doctor)?

_____

_____

_____

67. Based on the kinds of experience you had during your <u>pregnancy</u> and at the time of your <u>labour and delivery</u>, were there any kinds of information that you did not have but that you now think might have been useful (helpful) to you?

_____

_____

_____

_____

_____

_____

68. Thinking about your experiences since the birth of your child, what kinds of information do you think would be useful (helpful) to you in <u>caring for your child</u> (information that you did not have when your baby was born or that you do not have now)?

_____

_____

_____

_____

_____

_____

Statements 69 to 80 are a few comments concerning pregnancy, labour, baby care and self care. I am interesting in knowing how you feel about the comments. Please check the answer that most nearly agrees with how you feel. check only one answer for each statement.

69. Eating fried foods is alright during pregnancy.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

70. The weight of the baby is not affected by cigarette smoking during pregnancy.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

71. Eating vegetables every day during pregnancy is necessary.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

72. Swimming or fast walking during pregnancy is not a good idea.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

73. Filters make cigarettes safe.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

74. There is really little a woman can do to help herself during labour and delivery.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

75. One should not give a baby 2% milk before at least eight months of age.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

76. Swelling of hands and feet in pregnancy is normal and to be expected.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

77. If one is overweight when one becomes pregnant it is particularly important to try to gain less than 25 pounds during pregnancy.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

78. Eating beef, chicken, fish or dried beans of some sort, _every_ day during pregnancy is important.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

79. Breastfeeding is one way to prevent further pregnancies from occurring.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

80. It is advisable not to take any medicine if one is breastfeeding.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

Statements 81 to 88 are some comments about health and illness, in general. I am interested in knowing how you feel about these statements. Please check the answer that most nearly agrees with how you feel. Check only one answer for each statement.

---

81. Good health is largely a matter of good fortune.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

82. If I take care of myself I can avoid illness.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

83. Whenever I get sick it is because of something I've done or not done.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

84. No matter what I do, if I am going to get sick I will get sick.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

85. I can only do what my doctor tells me to do.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

86. When I feel sick I know it is because I have not been getting the proper exercise or eating right.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

87. There are so many strange diseases around that you can never know how or when you might pick one up.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

88. People who never get sick are just plain lucky.

_____ I strongly agree   _____ I disagree

_____ I agree   _____ I strongly disagree

Questions 89 to the end will be about yourself and your family/household.

---

89. In what year were your born?   _____

90. What is your marital status?

_____ Single   _____ Divorced

_____ Married   _____ Separated

_____ Widowed   _____ Other (specify) _____

91. Where were you born (country)?   _____

92. As well as perhaps being a Canadian, do you belong to any of these broad cultural groups?

_____ British (Anglo/Saxon)   _____ Native Indian

_____ Chinese   _____ French

_____ Japanese   _____ European (other than French)

_____ East Indian   _____ Other (specify) _____

93. Which language is primarily spoken in your home?

_____ English   _____ French

_____ Language of China   _____ Language of Europe
                                      (other than French

_____ East Indian   _____ Other (specify) _____

94. How well do you understand English?

Spoken English: No _____ Somewhat _____ Yes _____

Written English: No _____ Somewhat _____ Yes _____

95. Do you belong to a religious (faith) group?

_____ No _____ Yes Describe: _____

_____

96. How many years of schooling have you had (starting with Grade 1)? ____

97. Who is the major wage-earner in your household (relationship, not name)?

_____

98. If you normally work for a wage or salary, what is your usual occupation? Be specific about what you do on your job?

_____

_____

_____

99. If you normally work for a wage or salary, when did you last work?

(Month, year) _____

100. If your husband/partner normally works for a wage or salary, what is his usual occupation? Be specific about what he does on his job.

_____

_____

_____

101. If your husband/partner normally works, is he employed right now?

_____ No _____ Yes

102. List all the people who live in your household, including children. List these persons by relationship (e.g., husband, daughter, mother, friend), not by their names:

_____

_____

_____

_____

_____

_____

****

Thank you for your assistance in this study. If you have any other information or thoughts that you wish to add, please write on the following page.
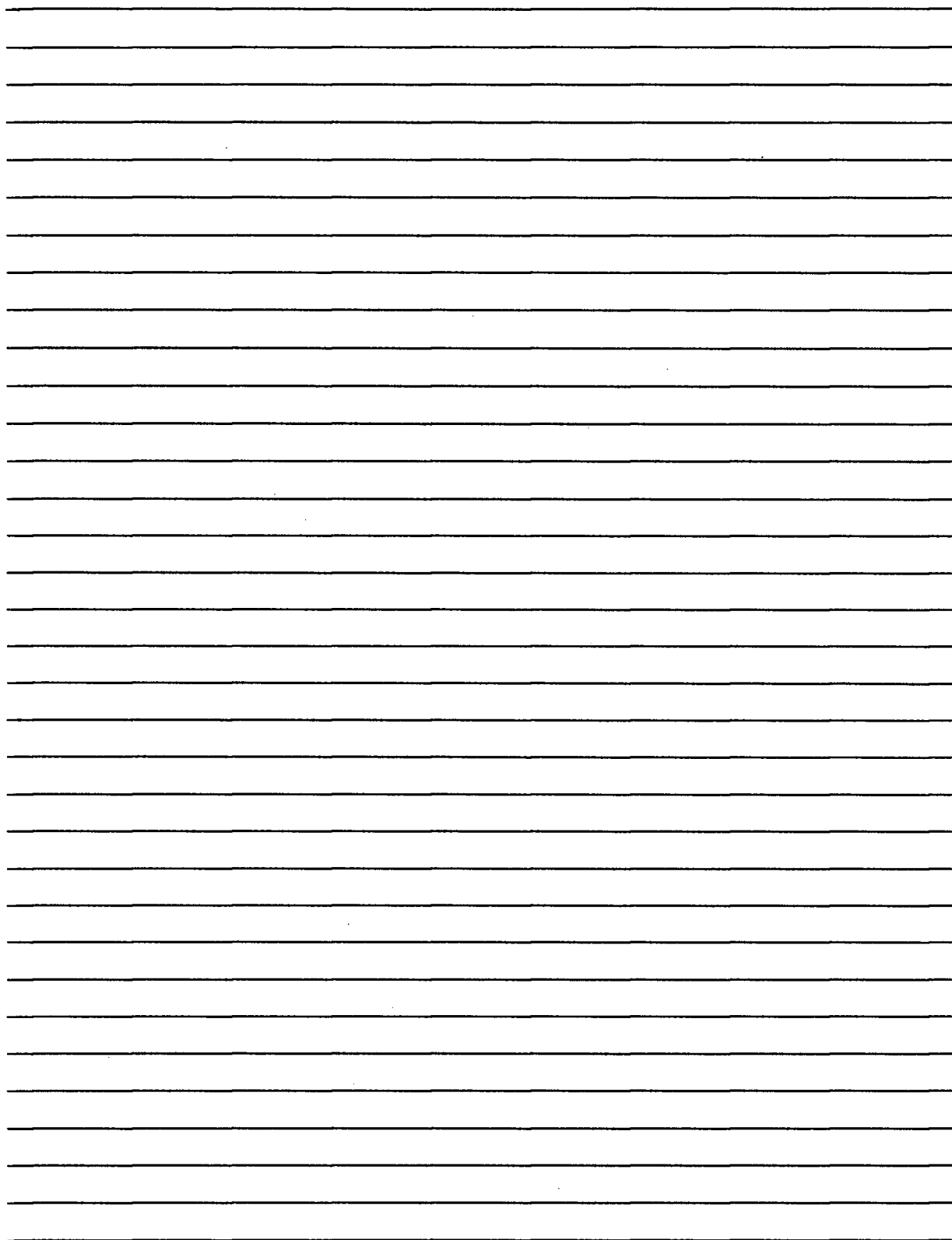
APPENDIX C

PERMISSION FROM ASSISTANT DEPUTY MINISTER
PREVENTIVE SERVICES

APPENDIX D

CODE DEFINITIONS OF SOME STUDY VARIABLES

Code Definitions of Some Variables in Questionnaire
that are not Self-Explanatory

10. FREQUENCY TO DOCTOR
    - Regularly: minimum every month
    - Less Regularly: when symptomatic only, once in a while, interrupted
      pattern, less than every month

11. HEALTH PROBLEMS (requiring treatment)
    - Slight: minor complaints, e.g., morning sickness less than four
      months, varicose veins, transient "blues" requiring no
      medication therapy
    - Moderate: persistent difficulties or accumulation of minor symptoms
      connected with pregnancy, e.g., morning sickness more than four
      months, high blood pressure/pre-eclampsia requiring no
      medication or hospital therapy, psychiatric symptoms but no
      psychosis
    - Serious: menace to pregnancy, e.g., suspected miscarriage,
      extrauterine pregnancy, eclampsia. Anything requiring
      hospitalization. (Huttel et al., 1971, Adaptation.)

98. RESPONDENT'S USUAL OCCUPATION (if normally work for a wage or salary)
    - Professionals, managers, officials, e.g., doctor, lawyer, engineer,
      nurse with degree or at management level, manager/owner of a
      large or professional business, teacher of Grade 1 and above
    - Technical, Sales, Clerical, Draftsmen, Foremen, Operatives, e.g.,
      draftsman, secretary, teacher of kindergarten or preschool,
      mechanic, nurse without degree/management position,
      manager/owner of a small or technical business, policeman,
      salesperson
    - Service workers, Labourers, Farmers, e.g., waitress, security,
      guard, cashier, janitor, farmhand. (Cave, 1978, adaptation.)

100. As above.

APPENDIX E

CODE BOOK

CODEBOOK - FILE ONE

(PARTIAL SAMPLE: RESPONDERS)

Participant #

    Card #

☐ 1   ☐ 2   ☐ 3

☐ 4

BIRTH NOTICE DATA

Town Area:	Maple Ridge	1	Gibsons	4	☐ 5
	Langley	2	Powell River	5	
	Mission	3	Squamish	6	

Gestational Age (weeks):   <37 = 3
    37-42 = 2
    >42 = 1   ☐ 6

Infant Birth Weight (grams): <2500   = 4
    2500-3000 = 3
    3001-3500 = 2
    >3500   = 1   ☐ 7

Apgar (1st & 2nd):   0-4 = 3
    5-7 = 2
    8-10 = 1   ☐ 8 ☐ 9

Maternal Complications: None   1
    Min.-mod. 2
    Serious   3   ☐ 10

Infant Complications: None   1
    Min.-mod. 2
    Serious   3   ☐ 11

Delivery Mode: Spontaneous   1
    Forceps   2
    Spont.-ass't/extracted breech   3 ☐ 12
    C/S   4

Marital Status: Legally married   1 ☐ 13
    Other   2

QUESTIONNAIRE DATA

⬜ ⬜ ⬜ ⬜

1. Date born: day, month   14 15 16 17

2. # Pregnancies   ⬜ 18

3. Talked with: Husband/Partner   1
                   Other Relative(s)/Friend(s)/Neighbour(s) 2
                   Professional(s)   3
                   1 & 2   4   ⬜ 19
                   1 & 3   5
                   2 & 3   6
                   1 & 2 & 3   7

    # People talked to: ⬜ 20

4. Talked about: Prenatal Care   ⬜ 21
                   Mental State   ⬜ 22
                   Infant   ⬜ 23
                   Labour, Delivery   ⬜ 24
                   Personal, Family Adjustments   ⬜ 25

5. Information on Pregnancy: Yes, circled   1
                                        Yes   2
                                        No   3

    Husband   ⬜ 26   PHN   ⬜ 32
    Relative   ⬜ 27   Readings - Prof. ⬜ 33
    Friend/Neighbour ⬜ 28   Readings - Lay   ⬜ 34
    Doctor   ⬜ 29   TV, Radio   ⬜ 35
    Dr.'s Nurse   ⬜ 30   Experience   ⬜ 36
    Prenatal Classes ⬜ 31   Other   ⬜ 37

    # Sources Named   ⬜ 38 ⬜ 39

    Main Sources/Combinations   ⬜ 40 ⬜ 41
    Doctor/Dr.'s Nurse/PHN   1   2 & 4   13
    Readings, Media   2   2 & 5   14
    Husband/Relative/Friend 3   2 & 6   15
    Prenatal Classes   4   3 & 4   16
    Personal Experience   5   3 & 5   17
    Other   6   3 & 6   18
    1 & 2   7   4 & 5   19
    1 & 3   8   4 & 6   20
    1 & 4   9   5 & 6   21
    1 & 5   10   don't know   88
    1 & 6   11   no response   99
    2 & 3   12   inapplicable   0

6. Information on Labour & Childbirth:

	Yes, circled	1
	Yes	2
	No	3

Husband	☐ 42	Readings - Prof.	☐ 49
Relative	☐ 43	Readings - Lay	☐ 50
Friend/Neighbour	☐ 44	TV, Radio	☐ 51
Doctor	☐ 45	Hospital Tour	☐ 52
Dr.'s Nurse	☐ 46	Experience	☐ 53
Prenatal Classes	☐ 47	Other	☐ 54
PHN	☐ 48		

Sources Named   ☐ 55 ☐ 56

                                    ☐ 57 ☐ 58

Main Sources/Combinations:

Doctor/Dr.'s Nurse/PHN	1	2 & 4	13
Readings, Media	2	2 & 5	14
Husband/Relative/Friend	3	2 & 6	15
Prenatal Classes	4	3 & 4	16
Personal Experience	5	3 & 5	17
Other	6	3 & 6	18
1 & 2	7	4 & 5	19
1 & 3	8	4 & 6	20
1 & 4	9	5 & 6	21
1 & 5	10	don't know	88
1 & 6	11	no response	99
2 & 3	12	inapplicable	0

7. Information on Childcare:

	Yes, circled	1
	Yes	2
	No	3

Husband	☐ 59	PHN	☐ 65
Relative	☐ 60	Readings - Prof.	☐ 66
Friend/Neighbour	☐ 61	Readings - Lay	☐ 67
Doctor	☐ 62	TV, Radio	☐ 68
Dr.'s Nurse	☐ 63	Experience	☐ 69
Prenatal Classes	☐ 64	Other	☐ 70

Sources Named   ☐ 71 ☐ 72

                                    ☐ 73 ☐ 74

Main Sources/Combinations:

Doctor/Dr.'s Nurse/PHN	1	2 & 4	13
Readings, Media	2	2 & 5	14
Husband/Relative/Friend	3	2 & 6	15
Prenatal Classes	4	3 & 4	16
Personal Experience	5	3 & 5	17
Other	6	3 & 6	18

1 & 2	7	4 & 5	19		
1 & 3	8	4 & 6	20		
1 & 4	9	5 & 6	21		
1 & 5	10	don't know	88		
1 & 6	11	no response	99		
2 & 3	12	inapplicable	0		

8. Doctor in Pregnancy ☐ 75

9. Month to Doctor ☐ 76

10. Frequency to Doctor: Regularly 1 ☐ 77
                          Less Regularly 2
                          Never 3

11. Health Problems: No complaints 1 ☐ 78
                      Slight 2
                      Moderate 3
                      Serious 4

12. Dr.-Prenatal Classes: Recommended 1 ☐ 79
                           No Mention 2
                           Other 3
                           Not Recommended 4

13. Attended Classes _____ ☐ 80

    Participant #   ☐ 1   ☐ 2   ☐ 3
    Card #   4

14. Type - Classes: Provincial 1 ☐ 5
                     Other 2
                     Both 3

15. How Hear Classes: Professionals/Class Leaders 1 ☐ 6
                       Advertising 2
                       Relatives/Friends/Neighbours 3
                       1 & 2 4
                       1 & 3 5
                       2 & 3 6
                       1 & 2 & 3 7

16. Encouragement ☐ 7

17. Who/What Encouraged
    # Persons Mentioned ☐ 8
    Most N.B.: Husband 1
                Other Relatives/Friends/Neighbours 2
                PHN(s) 3

Doctor/Dr.'s Office   4   □9
Posters, Advertising   5
Other   6

18. **Previous Classes**   □10
     # Years Ago   □11

19. **Knew Other Attenders**   □12

20. **Reasons – Attendance: (1st column = main reason)** □13 □14 □15 □16
     Overall knowledge gain
     Healthy Pregnancy/Infant
     Labour/Deliver Preparation
     Newborn Care & Information
     Involve Husband/Partner
     Share with/Support other attenders
     Other

     Information/Knowledge of Pregnancy, Birth, Infant Reasons   1   □17
     Personal/Family/Social Reasons   2
     Both   3

21. **Started Classes**   □18

22. **Classes Attended**
       One Series Classes:
         <50% attendance   1   □19
         50-99% attendance   2
         100% attendance   3

       Two Series Classes
       <u>1st series</u>   <50% attendance   1   □20
                        50-99% attendance   2
                        100% attendance   3
       <u>2nd series</u>   <50% attendance   1   □21
                        50-99% attendance   2
                        100% attendance   3

     Total # Classes Attended   □22 □23

23. **Reasons for Missing Classes:**   □24
       Nothing to be Learned   1
       Didn't like classes attended   2
       Practical problems   3
       1 & 2   4
       1 & 3   5
       2 & 3   6
       1 & 2 & 3   7

24. Husband/Partner Attendance ☐25

25. Other Attendance ☐26

26. Learned Something New:

Learned 1
Not Learned 2
Not Covered 3

Diet	☐27	Labour	☐34
Breathing Techs.	☐28	Hospital	☐35
Managing Discomforts	☐29	C/S	☐36
Changes in Marriage	☐30	Family Planning	☐37
Sexual Adjustment	☐31	Feeding Baby	☐38
Preparation Children	☐32	Other Care Baby	☐39
Father Adjustment	☐33	Questions	☐40

Things Learned ☐41 ☐42

Information/Knowledge of Preg., Labour, Infant 1 ☐ 43
Personal/Family/Social 2
Both 3

27. Liked About Classes: ☐44 ☐45 ☐46 ☐47
Overall Knowledge Gain 1
Information on Lifestyle, Pregnancy, Infant Development 2
Labour/Delivery Preparation 3
Information on Newborn Care 4
Partner Involvement 5
Meeting, Sharing with Others 6
Other 7

Information/Knowledge of Preg., Labour, Infant 1 ☐48
Personal/Family/Social 2
Both 3

28. Contact with others after ☐49

29. Didn't Like About Classes: ☐50
Content 1
Style 2
Inconvenience 3
1 & 2 4
1 & 3 5
2 & 3 6
1 & 2 & 3 7

Content: Too much 1
Too little 2
Inaccurate 3

Overall Information   ☐ 51
Lifestyle, Pregnancy, Infant Development   ☐ 52
Labour/Delivery   ☐ 53
Newborn Care   ☐ 54

30.	Time to Classes:	<15 minutes	1	☐ 55
		15-30 minutes	2	
		31-60 minutes	3	
		>60 minutes	4	

31.	Transportation:	Walk	1	☐ 56
		Bus	2	
		Car	3	
		1 & 2	4	
		1 & 3	5	
		2 & 3	6	
		1 & 2 & 3	7	
		Other	8	

32.	Knew About Classes:	Provincial	1	☐ 57
		Other	2	
		Both	3	

33.	How Hear - Classes:	Professionals/Class Ldrs.	1	☐ 58
		Advertising	2	
		Relatives/Friends/Nbrs.	3	
		1 & 2	4	
		1 & 3	5	
		2 & 3	6	
		1 & 2 & 3	7	

34. Prior Attendance   ☐ 59
    # years ago   ☐ 60

35. Knew Other Attenders   ☐ 61

36. Encouragement   ☐ 62

	Who Encouraged:	Husband	1	☐ 63
		Other Rels./Friends/Nbrs.	2	
		PHN(s)	3	
		Doctor/Dr.'s Office	4	
		Other	5	

37.	Who Discouraged:	Husband	1	☐ 64
		Other Rels./Friends/Nbrs.	2	
		PHN(s)	3	
		Doctor/Dr.'s Office	4	
		Other	5	

38. Purpose - Classes: (1st column = main reason) □ 65 □ 66 □ 67 □ 68
    Overall knowledge   1
    Healthy Lifestyle, Pregnancy, Infant   2
    Labour/Delivery Preparation   3
    Newborn Care & Information   4
    Involve Husband/Partner   5
    Share with/Support others   6
    Other   7

39. Reasons - Non-Attendance: (1st column=main reason) 69 □ 70 □ 71 □ 72
    Positive Previous Class Experience   1
    Negative Previous Class Experience   2
    Natural Process   3
    Dr. Provides Information   4
    Family/Friends Provide Information   5
    Reading Provides Information   6
    Practical Problems   7
    Other   8

40. Time to Classes: <15 minutes   1   □ 73
                          15-30 minutes   2
                          31-60 minutes   3
                          >60 minutes   4

41. Transportation: (pms=1st column; daytime=2nd column)   □ 74 □ 75
                          Walk   1
                          Bus   2
                          Car   3
                          1 & 2   4
                          1 & 3   5
                          2 & 3   6
                          1 & 2 & 3   7
                          Other   8

42. Smoking Before: No   1   □ 76
                          Yes - no # indicated 2
                          <1 package   3
                          1 package   4
                          >1 package (<than 2) 5
                          2+ packages   6

43. Smoking During: No   1   □ 77
                          Yes - no # indicated 2
                          <1 package   3
                          1 package   4
                          >1 package (<than 2) 5
                          2+ packages   6

44. Exercise Before: None   4   ☐ 78
                              <1/week   3
                              1-2/week   2
                              3+/week   1

45. Exercise During: None   4   ☐ 79
                              <1/week   3
                              1-2/week   2
                              3+/week   1

46. Alcohol Before: None   1   ☐ 80
                              1-4/week   2
                              5-9/week   3
                              >9/week   4

    Participant #   ☐ 1   ☐ 2 ☐ 3
                                                                            4
    Card #

47. Alcohol During: None   1   ☐ 5
                              1-4/week   2
                              5-9/week   3
                              >9/week   4

48. Weight Gain (pounds):   ☐ 6 ☐ 7

49. Diet Before: Not too good   3   ☐ 8
                              Adequate   2
                              Excellent   1

    Diet During: Not too good   3   ☐ 9
                              Adequate   2
                              Excellent   1

50. Milk Servings   ☐ 10

51. Breathing Techniques: Specific Pattern   ☐ 11
                                as learned   1
                              Other   2
                              None in Particular 3
                              1 & 2   4

52. Where Learned: Past Experience   ☐ 12
                              Current Prenatal Classes ☐ 13
                              Hospital Staff/Dr.   ☐ 14
                              Other   ☐ 15
    Current Classes Alone   1   ☐ 16
    Classes Combined With Something Else   2

53.	Labour Discomfort:	Minimum		1	☐ 17
		Moderate		2	
		Severe		3	
54.	Pain Reduction:	Medication		1	☐ 18
		Anaesthesia		2	
		Other		3	
		1 & 2		4	
		1 & 3		5	
		2 & 3		6	
		1 & 2 & 3		7	
55.	Smoking Now:	No		1	☐ 19
		Yes - no # indicated		2	
		<1 package		3	
		1 package		4	
		>1 package (<than 2)		5	
		2+ packages		6	
56.	Alcohol Now:	No		1	☐ 20
		1-4/week		2	
		5-9/week		3	
		>9/week		4	
57.	Diet Now:	Not too good		3	☐ 21
		Adequate		2	
		Excellent		1	
58.	Exercise Now:	None		4	☐ 22
		<1/week		3	
		1-2/week		2	
		3+/week		1	
59.	Feeding Baby:	Bottle 3	Both 2		☐ 23
		Breast 1	Other 4		

60. Breastfeeding: # months   ☐ 24 ☐ 25
    Stop Early   ☐ 26
        Reasons: Low Milk Supply   1
                  Tired   2   ☐ 27 ☐ 28
                  Work   3
                  Other   4

61. Baby Check-ups   ☐ 29
        Regular   1
        Sick only   2
        Other   3

62. Immunization   ☐ 30

       Why Not: Conscientious Objector   1   ☐ 31

                Other   2

                1 & 2   3

63. Age Immunization (months)   ☐ 32

64. PHN Visit   ☐ 33

65. Family Planning: Definite Plans   1   ☐ 34

                        Thinking about   2

                        Undecided/no plans   3

                        Definitely not   4

66. Talk With About Baby: ☐ 35

       Husband/Partner   1

       Other Relatives/Friends/Neighbours   2

       Professional(s)   3

       1 & 2   4

       1 & 3   5

       2 & 3   6

       1 & 2 & 3   7

       # People Talked To   ☐ 36

67. Information - Pregnancy & Labour/Deliver: ☐ 37 ☐ 38 ☐ 39

       No   1

       General exercise   2

       Nutrition, alcohol, smoking   3

       Labour information/preparation   4

       C/Section   5

       Dangers of toxemia, other complications   6

       Hospital routine   7

       Other   8

68. Information - Caring For Child   ☐ 40 ☐ 41 ☐ 42

       No   1

       Nutrition   2

       Protection, care (infections, etc.)   3

       Colic   4

       Skin   5

       Siblings   6

       Scheduling (e.g., sleep, bathing, eating)   7

       Other   8

69. Fried Foods: 4   3   2   1   ☐ 43

70. Smoking: 4   3   2   1   ☐ 44

71.	Vegetables	1	2	3	4	☐	45
72.	Swimming	4	3	2	1	☐	46
73.	Filters	4	3	2	1	☐	47
74.	Labour/Delivery	4	3	2	1	☐	48
75.	2% Milk	1	2	3	4	☐	49
76.	Swelling	4	3	2	1	☐	50
77.	Overweight	4	3	2	1	☐	51
78.	Protein	1	2	3	4	☐	52
79.	Breastfeeding	4	3	2	1	☐	53
80.	Medicine – breastfeeding	1	2	3	4	☐	54

81-88 Locus of Control Score ☐ 55 ☐ 56

(81 =	4	3	2	1
82 =	1	2	3	4
83 =	1	2	3	4
84 =	4	3	2	1
85 =	4	3	2	1
86 =	1	2	3	4
87 =	4	3	2	1
88 =	4	3	2	1)

89. Year Born. (<u>Age</u>)   ☐ 57 ☐ 58

90. Marital Status:
      Single   1   Divorced   4
      Married   2   Separated   5
      Widowed   3   Other   6

☐ 59

91. Where Born:
      Canada   1
      U.S.   2
      U.K.   3
      Europe   4
      Asia   5
      Other   6

☐ 60

92. Cultural Group: ☐ 61 ☐ 62
      British (Anglo-Saxon)   1   Native Indian   5
      Chinese   2   French   6
      Japanese   3   European (not Fr.)   7
      East Indian   4   Other   8

93. Language:

English	1	L. of India	4
L. of China	2	French	5
Japanese	3	European (not Fr.)	6
		Other	7

□ 63 □ 64

94. Understand English: Spoken   □ 65
                                                 Written   □ 66

Poor	3
Somewhat	2
Yes	1

95. Religion: □ 67

Protestant	1
Catholic	2
Other	3
None	4

96. Years of Schooling   □ 68 □ 69

97. Major Wage Earner: □ 70

Respondent	1
Husband/Partner	2
Mother/Father	3
Other	4

98. Respondent's Usual Occupation: □ 71

Professional, managers, officials	1
Technical, sales, clerical, craftsmen, foremen, operatives	2
Service workers, labourers, farm workers	3

99. Last worked: # years ago   □ 72

100. Husband's/Partner's Occupation   □ 73

Professional, managers, officials	1
Technical, sales, clerical, craftsmen, foremen, operatives	2
Service workers, labourers, farm workers	3

101. Employed   □ 74

102. Household members

# people	□ 75
# children	□ 76
# adults	□ 77
# generations	□ 78

CODEBOOK - FILE TWO

(TOTAL SAMPLE: RESPONDERS & NON-RESPONDERS)

Participant #

    Card #

    Response

☐ 1   ☐ 2   ☐ 3
                  ☐ 4
                  ☐ 5

BIRTH NOTICE DATA

Town Area:	Maple Ridge	1	Gibsons	4	☐ 6
	Langley	2	Powell River	5	
	Mission	3	Squamish	6	

Gestational Age (weeks):	<37 = 3	☐ 7
	37-42 = 2	
	>42 = 1	

Infant Birth Weight (grams):	<2500 = 4	☐ 8
	2500-3000 = 3	
	3001-3500 = 2	
	>3500 = 1	

Apgar (1st & 2nd):	0-4 = 3	9 ☐ 10
	5-7 = 2	
	8-10 = 1	

Maternal Complications:	None 1	☐ 11
	Min.-mod. 2	
	Serious 3	

Infant Complications:	None 1	☐ 12
	Min.-mod. 2	
	Serious 3	

Delivery Mode:	Spontaneous	1	☐ 13
	Forceps	2	
	Spont.-ass't/extracted breech	3	
	C/S	4	

| Marital Status: | Legally married | 1 | ☐ 14 |
| | Other | 2 | |

APPENDIX F

LETTER TO INTERVIEWEES

Department of Health Care and Epidemiology
Mather Building
5804 Fairview Avenue
Vancouver, B.C.
V6T 1W5

Dear

As a graduate student in the Health Services Planning Program at U.B.C., I am
interested in conducting a study involving mothers who have recently given birth.

The purpose of this study is to find out what the experiences of these women have
been during pregnancy, labour and the period of time immediately after giving
birth; in terms of health, their health practice and the types of care (services)
and support they received.

For the study you are one of the mothers chosen to be a representative of all
mothers who have given birth during the period January 15 to February 16, 1983, and
who live in the area covered by the Coast-Garibaldi and Central Fraser Valley
Health Units.

I wish to interview you within the next month or two. The information you would be
able to give is important to the study. In about a week, I will phone you at which
time you will be able to tell me whether you are willing to help in the study. Any
questions you have about the study can be discussed at this time, too. The
interview would take about one to one and one-half hours of your time.

Your participation in this study is voluntary. Refusal to participate or a
decision to withdraw from the study, at any time, will not jeopardize further
health care for you.

All the information you provide would be kept confidential. Only myself and one
typist will know the names of the women participating in the study. Your name
would not be recorded in any way in the study results. The actual answers that are
given will only be seen by me and my faculty advisor, Dr. Nancy Waxler at U.B.C.

Your cooperation in this matter will be appreciated.

Yours sincerely,

Mary L. Spoke, R.N., B.S.N.
(Student in Health Services
 Planning Program, U.B.C.)

APPENDIX G

MOTHER'S CONSENT TO THE INTERVIEW

THE UNIVERSITY OF BRITISH COLUMBIA

Faculty of Medicine

155

Department of Health Care and Epidemiology
Mather Building
5804 Fairview Avenue
Vancouver, B.C.
V6T 1W5

I understand that the purpose of this study concerns new mothers and their experiences during the pregnancy, childbirth and post-childbirth periods. This has been explained to me to my satisfaction.

I also understand that confidentiality is assured; that is, that only the interviewer and her faculty advisor will know me by name as a participant in this study; that my name will not be identified in any way in the study results; and that no quotations or case histories will be used which can be identified.

It has been explained to me that my decision to participate in the study is voluntary and that should I decide to withdraw from the study, at any time, I will not be jeopardizing further care for myself.

I give the interviewer permission to interview me.

_____   Date _____   19 ___

_____   Date _____   19 ___
(Interviewer-Witness)
Mary L. Spoke

APPENDIX H

LETTER TO MAILED SUBJECT

Faculty of Medicine   157

Department of Health Care and Epidemiology
Mather Building
5804 Fairview Avenue
Vancouver, B.C.
V6T 1W5

Dear

As a graduate student in the Health Services Planning Program at U.B.C., I am
interested in conducting a study involving mothers who have recently given birth.

The purpose of this study is to find out what the experiences of these women have
been during pregnancy, labour and the period of time immediately after giving
birth; in terms of health, their health practice and the types of care (services)
and support they received.

For the study you are one of the mothers chosen to be a representative of all
mothers who have given birth during the period January 15 to February 16, 1983, and
who live in the area covered by the Coast-Garibaldi and Central Fraser Valley
Health Units.

Enclosed is a questionnaire which I hope you will agree to complete. This should
take approximately one-half to one hour of your time. Your participation in this
study is voluntary. Refusal to participate, or a decision to withdraw from the
study, at any time, will not jeopardize further health care for you.

All the information that is provided will be kept strictly confidential. Only
myself and one typist will know the names of the women participating in the study.
Your name will not be recorded in any way in the study results. The actual answers
that are given will only be seen by me and my faculty advisor, Dr. Nancy Waxler at
U.B.C.

Your cooperation in this matter will be appreciated.

Should you have any questions, please do not hesitate to call me, or leave a
message at   between 8:30 a.m. and 4:30 p.m. If calling long distance,
please phone collect,   , between 7:00 and 8:00 a.m.

Yours sincerely,

Mary L. Spoke, R.N., B.S.N.
(Student in Health Services
 Planning Program, U.B.C.)

Enclosed: Questionnaire
           Stamped/addressed return envelope

APPENDIX I

REMINDER LETTER TO MAILED SUBJECT

Department of Health Care and Epidemiology
Mather Building
5804 Fairview Avenue
Vancouver, B.C.
V6T 1W5

Dear

On March 25, 1983, I sent to you a questionnaire designed
to find out about your experiences during pregnancy,
labour and the period of time immediately after giving
birth. The questions concerned your health, health
practices and the types of care (services) and support
you received during that period.

If you have already completed the questionnaire and
mailed it to me, please ignore this letter.

If you have received this questionnaire but have not yet
completed it and mailed it back to me, I would appreciate
you doing so as soon as possible. It is important to the
study that I get your information and views.

Yours sincerely,

Mary L. Spoke, R.N., B.S.N.
(Student in Health Services
 Planning Program, U.B.C.)

APPENDIX J

RESPONSE BIAS TABLES

TABLE 32

DISTRIBUTION OF RESPONDERS AND
NON-RESPONDERS BY DELIVERY MODE

	Spontaneous		Forceps		Spontaneous Assisted/ Extracted Breech		Caesarian Section	
Responders	123	(81%)	13	(93%)	4	(80%)	37	(73%)
Non-Responders	29	(19%)	1	(4%)	1	(20%)	14	(27%)
	152	(100%)	14	(100%)	5	(100%)	51	(100%)

n = 222

TABLE 33

DISTRIBUTION OF RESPONDERS AND
NON-RESPONDERS BY BIRTHWEIGHT

	$>$ 3500 Grams		3001 - 3500 Grams		2500 - 3000 Grams		$<$ 2500 Grams	
Responders	85	(80%)	68	(83%)	21	(68%)	3	(100%)
Non-Responders	21	(20%)	14	(17%)	10	(32%)	0	(0)
	106	(100%)	82	(100%)	31	(100%)	3	(100%)

n = 222

TABLE 34

DISTRIBUTION OF RESPONDERS AND
NON-RESPONDERS BY GESTATIONAL AGE

	< 37 Weeks		37-42 Weeks		>42 Weeks		
Responders	2	(100%)	165	(79%)	6	(86%)	
Non-Responders	0	(0)	43	(21%)	1	(14%)	
	2	(100%)	208	(100%)	7	(100%)	n = 217

TABLE 35

DISTRIBUTION OF RESPONDERS AND
NON-RESPONDERS BY FIRST APGAR

	0-4		5-7		8-10		
Responders	3	(75%)	24	(69%)	148	(82%)	
Non-Responders	1	(25%)	11	(31%)	32	(18%)	
	.4	(100%)	35	(100%)	180	(100%)	n = 217

TABLE 36

DISTRIBUTION OF RESPONDERS AND
NON-RESPONDERS BY SECOND APGAR

	5-7		8-10		
Responders	6	(75%)	165	(80%)	
Non-Responders	2	(25%)	41	(20%)	
	8	(100%)	20%	(100%)	n = 214

TABLE 37

DISTRIBUTION OF RESPONDERS AND NON-RESPONDERS
BY MOTHER'S PLACE OF RESIDENCE

	Maple Ridge		Langley		Mission		Gibsons	
Responders	41	(82%)	76	(94%)	14	(61%)	14	(70%)
Non-Responders	9	(18%)	14	(16%)	9	(39%)	6	(30%)
	50	(100%)	90	(100%)	23	(200%)	20	(100%)

	Powell River		Squamish			
Responders	20	(83%)	12	(80%)		
Non-Responders	4	(17%)	3	(20%)		
	24	(100%)	15	(100%)	n = 222	

TABLE 38

RESULTS OF CROSS-TABULATING CURRENT ATTENDANCE WITH INDEPENDENT VARIABLES

Factors Related to Current Attendance	Current Class Attendance Yes		No		Total "n" Used	Significance
Primiparous	81.5%	(66)	18.5%	(15)	174	0.000
Multiparous	34%	(32)	66%	(61)		
Doctor Recommended Classes	76%	(76)	24%	(24)	174	0.000
Received Encouragement from Others to Attend Classes	72%	(55)	28%	(21)	169	0.001
Previously Attended Classes	31%	(24)	69%	(53)	171	0.000
Regularly Visited Doctor	60%	(99)	40%	(66)	175	0.002
Anglo-Saxon Culture	71%	(40)	29%	(16)	113	0.006
Born in N. America or U.K.	60%	(94)	40%	(62)	175	0.010
Used More Sources of Information on Childbirth (4 to 10 compared to 1 to 3)	62%	(77)	38%	(48)	174	0.038

TABLE 39

CURRENT ATTENDANCE BY MOTHER'S EDUCATION

Current Attendance	Education (Years) 7-10		11-12		13-19		
Yes	7	(32%)	56	(61.5%)	36	(57%)	
No	15	(68%)	35	(38.5%)	27	(43%)	
Total	22	(100%)	91	(100%)	63	(100%)	n = 176

$x^2 = 6.391$ p.   0.0409

TABLE 40

RESULTS OF CROSS-TABULATING EVER ATTENDANCE WITH INDEPENDENT VARIABLES

Factors Related to Ever Attendance	Attendance Yes		No		N	Significance
English Language	89%	(148)	11%	(19)	175	0.001
Born in N. America or U.K.	89%	(139)	11%	(17)	175	0.006
Anglo-Saxon Culture	89%	(87)	11%	(11)	113	0.012
Talked to a Number of People About Pregnancy	90%	(113)	10%	(12)	175	0.024
Talked to One Person About Pregnancy	76%	(38)	24%	(12)		
Used More Sources of Information on Childbirth (4 to 10 Compared to 1 to 3)	90%	(113)	10%	(12)	174	0.045

TABLE 41

EVER ATTENDANCE BY MOTHER'S EDUCATION

Ever Attendance	Education (Years) 7-10		11-12		13-19	
Yes	13	(59%)	81	(89%)	58	(92%)
No	9	(41%)	10	(11%)	5	(8%)
Total	22	(100%)	91	(100%)	63	(100%) n = 176

$X^2 = 16.174$ 0.0003

TABLE 42

PREDICTORS OF CURRENT-PRENATAL
CLASS ATTENDANCE

Variables	Pearson Correlation Coefficients	P-values
Parity	0.4734	0.000
Physician Recommendation	0.4484	0.000
Household Size	0.3338	0.000
Received Encouragement	0.3151	0.000
Visits to Physician	0.2810	0.000
Culture	0.2789	0.003
Place of Birth	0.2184	0.004
Occupation	-0.1918	0.034
No. Persons Talked to About Pregnancy	0.1788	0.022

TABLE 43

PREDICTORS OF EVER-PRENATAL
CLASS ATTENDANCE

Variables	Pearson Correlation Coefficients	P-values
Language	0.3104	0.000
Place of Birth	0.2862	0.000
Culture	0.2731	0.003
Visits to Physician	0.2686	0.000
Education	0.2425	0.001
Household Size	0.2147	0.004
No. Sources of Information on Childbirth	0.1706	0.024
No. Persons Talked to About Pregnancy	0.1644	0.030
Marital Status	0.1612	0.033
Chief Wage Earner - Partner	0.1574	0.038

APPENDIX K

OBJECTIVE I TABLES

TABLE 44

CURRENT ATTENDING BY MAIN SOURCES OF
INFORMATION ON PREGNANCY (DETAILED)

Current Attenders	Main Sources of Information							
	Prenatal Classes		Pro-fessionals		Readings/ Media		Partner/ Relatives, Friends	Personal Experience	Other	
Yes	41	(84%)	50	(62.5%)	55	(57%)	28 (49%)	14 (29%)	2 (40%)	
No	8*	(16%)	30	(37.5%)	41	(43%)	29 (51%)	35 (71%)	3 (60%)	
Total	49	(100%)	80	(100%)	96	(100%)	57 (100%)	49 (100%)	5 (100%)	336** (168 mothers)

*a few current non-attenders cited classes as a main sources of information. These were women who had presumably attended classes previously.

**336 = 168 mother respondents. Each cited two main sources of information.

TABLE 45

CURRENT ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON LABOUR AND CHILDBIRTH (DETAILED)

	Main Sources of Information						
Current Attenders	Prenatal Classes	Pro-fessionals	Readings/ Media	Partner/ Relatives, Friends	Personal Experience	Other	
Yes	61 (100%)	31 (58.5%)	36 (52%)	29 (51%)	15 (23%)	6 (25%)	
No	0 (0%)	22 (41.5%)	33 (48%)	28 (49%)	49 (77%)	18 (75%)	
Total	61 (100%)	53 (100%)	69 (100%)	57 (100%)	64 (100%)	24 (100%)	328 (164 mothers)

TABLE 46

CURRENT ATTENDING BY MAIN SOURCES OF
INFORMATION ON CHILDCARE (DETAILED)

Current Attenders	Prenatal Classes		Pro- fessionals		Readings/ Media		Partner/ Relatives, Friends		Personal Experience		Other		
Yes	21	(100%)	26	(50%)	51	(62%)	54	(67%)	27	(37%)	7	(47%)	
No	0	(0%)	26	(50%)	31	(38%)	27	(33%)	46	(63%)	8	(53%)	
Total	21	(100%)	52	(100%)	82	(100%)	81	(100%)	73	(100%)	15	(100%)	324 (162 mothers)

TABLE 47

EVER-ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON PREGNANCY (DETAILED)

Current Attenders	Prenatal Classes		Pro- fessionals		Readings/ Media		Partner/ Relatives, Friends		Personal Experience		Other		
Yes	49	(100%)	73	(91%)	81	(84%)	42	(74%)	41	(84%)	4	(80%)	
No	0	(0%)	7	(9%)	15	(16%)	15	(26%)	8	(16%)	1	(20%)	
Total	49	(100%)	80	(100%)	96	(100%)	57	(100%)	49	(100%)	5	100%)	336 (168 mothers)

TABLE 48

EVER-ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON LABOUR AND CHILDBIRTH (DETAILED)

Current Attenders	Prenatal Classes		Pro-fessionals		Readings/ Media		Partner/ Relatives, Friends		Personal Experience		Other		
Yes	75	(100%)	46	(88%)	54	(78%)	44	(77%)	54	(84%)	9	(90%)	
No	0	(0%)	7	(12%)	15	(22%)	13	(23%)	10	(16%)	1	(10%)	
Total	75	(100%)	53	(100%)	69	(100%)	57	(100%)	64	(100%)	10	(100%)	328 (164 mothers)

TABLE 49

EVER-ATTENDANCE BY MAIN SOURCES OF
INFORMATION ON CHILDCARE (DETAILED)

Current Attenders	Prenatal Classes		Pro-fessionals		Readings/ Media		Partner/ Relatives, Friends		Personal Experience		Other		
Yes	24	(100%)	42	(81%)	67	(92%)	78	(87%)	64	(88%)	9	(75%)	
No	0	(0%)	10	(19%)	6	(8%)	12	(13%)	9	(12%)	3	(25%)	
Total	24	(100%)	52	(100%)	73	(100%)	90	(100%)	73	(100%)	12	(100%)	324 (162 mothers)

APPENDIX L

CODING OF VARIABLES FOR
PATH MODEL: FIGURES 4 AND 22

Specific forms in which control variables of the path model in Figures 4 to 22 are coded and analyzed

Variable	Form of Measurement
Current prenatal class attendance	1. Yes (one or more classes) 2. No
MD recommended prenatal class attendance	1. Recommended 2. No mention 3. Other 4. Not recommended
Other people encouraged prenatal class attendance, e.g., friends, relatives	1. Yes 2. No
Household size	Number of household members including new infant
Parity	Number of pregnancies
Culture, ethnic group membership of mother	1. British (Anglo-Saxon) 2. Other
Infant Complications	1. None 2. Minimum — Moderate 3. Serious
Maternal Health Status	1. No complaints 2. Slight problems 3. Moderate problems 4. Serious problems

APPENDIX M

OBJECTIVE II TABLES

TABLE 50

RESULTS OF CROSS TABULATING OUTCOMES WITH INDEPENDENT VARIABLE, CURRENT ATTENDANCE

Outcomes	Current Attendance				Total "n" Used	Significance
	Yes		No			
No Infant Complications	72%	(71)	86%	(66)	176	0.04
Minimum Labour Discomfort Perceived	15%	(14)	28%	(20)	168	0.06
Spontaneous Vaginal Delivery	64%	(63)	78%	(60)	176	0.06
Birthweight 3000 Grams	91%	(89)	80.5%	(62)	175	0.08

TABLE 51

RESULTS OF CROSS TABULATING OUTCOMES WITH INDEPENDENT VARIABLE, EVER ATTENDANCE

Outcomes	Ever Attendance				Total "n" Used	Significance
	Yes		No			
Used Labour Breathing Techniques	83%	(126)	58%	(14)	175	0.009
Family Planning Used	76%	(113)	96%	(22)	172	0.03
Knowledge About Swimming in Pregnancy	95%	(144)	83%	(20)	176	0.06
Spontaneous Vaginal Delivery	67%	(102)	87.5%	(21)	176	0.05
Breastfeeding Knowledge	93%	(141)	79%	(19)	175	0.02
Knowledge About Diet and Obesity	62%	(94)	33%	(8)	175	0.01

TABLE 52

SIMPLE CORRELATIONS OF CURRENT ATTENDANCE WITH DEPENDENT VARIABLES

Variables	Pearson Correlation Coefficients	P-values
Visits to Physician	0.2810	0.000
Use of Labour Breathing Techniques	0.2248	0.003
Infant Complications	-0.1672	0.027
Maternal Complications	-0.1594	0.035
Delivery Mode	-0.1545	0.041
Smoking Behaviour Post-Partum	0.1290	0.089
Feeding of Baby	-0.1260	0.096

TABLE 53

SIMPLE CORRELATIONS OF EVER ATTENDANCE WITH DEPENDENT VARIABLES

Variables	Pearson Correlation Coefficients	P-values
Visits to Physician	0.02686	0.000
Use of Labour Breathing Techniques	0.2159	0.004
Family Planning Decision	-0.1641	0.031
Delivery Mode	-0.1526	0.043
Alcohol Behaviour During Pregnancy	0.1347	0.075
Knowledge of Breastfeeding	0.1341	0.078
Feeding of Baby	0.1271	0.093

TABLE 54

LABOUR BREATHING TECHNIQUES BY
CURRENT ATTENDANCE AND
MOTHER'S CULTURAL BACKGROUND

Used Labour Breathing Techniques	Current Attendance			
	Yes		No	
	Anglo-Saxon	Other Culture	Anglo-Saxon	Other Culture
Yes	35 (87.5%)	23 (92%)	14 (93%)	22 (69)
No	5 (12.5%)	2 (8%)	1 (7%)	10 (31%)
Total	40 (100%)	25 (100%)	15 (100%)	32 (100%) 112

TABLE 55

LABOUR BREATHING TECHNIQUES BY
CURRENT ATTENDANCE AND
MOTHER'S EDUCATION IN YEARS

Used Labour Breathing Techniques	Current Attendance					
	Yes			No		
	9-10 Years	11-12 Years	13-19 Years	7-10 Years	11-12 Years	13-19 Years
Yes	5 (71%)	49 (87.5%)	33 (92%)	10 (67%)	21 (62%)	22 (81.5%)
No	2 (29%)	7 (12.5%)	3 (8%)	5 (33%)	13 (38%)	5 (18.5%)
Total	7 (100%)	56 (100%)	36 (100%)	15 (100%)	34 (100%)	27 (100%)

75

TABLE 56

LABOUR BREATHING TECHNIQUES BY
CURRENT ATTENDANCE AND PARITY

Used Labour Breathing Techniques	Current Attendance								
	Yes				No				
	Primipara		Multipara		Primipara		Multipara		
Yes	59	(89%)	27	(84%)	12	(80%)	41	(68%)	
No	7	(11%)	5	(16%)	3	(20%)	19	(32%)	
Total	66	(100%)	32	(100%)	15	(100%)	60	(100%)	173

TABLE 57

LABOUR BREATHING TECHNIQUES BY
NUMBER OF CLASSES ATTENDED

Used Labour Breathing Techniques	Number of Classes Attended								
	5-15		3-4		1-2		0		
Yes	63	(91%)	13	(100%)	5	(62.5%)	53	(70%)	
No	6	(9%)	–		3	(37.5%)	23	(30%)	
Total	69	(100%)	13	(100%)	8	(100%)	76	(100%)	166

TABLE 58

INFANT COMPLICATIONS BY CURRENT ATTENDANCE AND MOTHER'S CULTURAL BACKGROUND

Infant Complications	Current Attendance			
	Yes		No	
	Anglo-Saxon	Other Culture	Anglo-Saxon	Other Culture
No	31 (77.5%)	18 (72%)	12 (75%)	28 (87.5%)
Yes	9 (22.5%)	7 (28%)	4 (25%)	4 (12.5%)
Total	40 (100%)	25 (100%)	15 (100%)	32 (100%) 114

TABLE 59

INFANT COMPLICATIONS BY CURRENT ATTENDANCE AND MOTHER'S AGE IN YEARS

Infant Complications	Current Attendance					
	Yes			No		
	$<$ 20 Years	20-29 Years	29 Years	20 Years	20-29 Years	$>$ 29 Years
Yes	47 (70%)	21 (72%)	3 (100%)	43 (86%)	20 (83%)	3 (100%)
No	20 (30%)	8 (28%)	-	7 (14%)	4 (17%)	-
Total	67 (100%)	29 (100%)	3 (100%)	50 (100%)	24 (100%)	3 (100%) 176

TABLE 60

INFANT COMPLICATIONS BY CURRENT ATTENDANCE
AND MOTHER'S EDUCATION IN YEARS

Infant Complications	Current Attendance						
	Yes			No			
	7-10 Years	11-12 Years	13-19 Years	7-10 Years	11-12 Years	13-19 Years	
Yes	3 (43%)	41 (75%)	27 (75%)	13 (87%)	33 (94%)	20 (74%)	
No	4 (57%)	15 (27%)	9 (25%)	2 (13%)	2 (6%)	7 (26%)	
Total	7 (100%)	56 (100%)	36 (100%)	15 (100%)	35 (100%)	27 (100%)	176

TABLE 61

INFANT COMPLICATIONS BY CURRENT ATTENDANCE
AND PARITY

Infant Complications	Current Attendance				
	Yes		No		
	Primipara	Multipara	Primipara	Multipara	
Yes	47 (71%)	24 (75%)	12 (80%)	53 (87%)	
No	19 (29%)	8 (25%)	3 (20%)	8 (13%)	
Total	66 (100%)	32 (100%)	15 (100%)	61 (100%)	174

TABLE 62

INFANT COMPLICATIONS BY NUMBER OF CLASSES ATTENDED

| Infant Complications | Number of Classes Attended | | | | | | | |
	5-15		3-4		1-2		0	
Yes	47	(68%)	11	(85%)	6	(75%)	66	(86%)
No	22	(32%)	2	(15%)	2	(25%)	11	(14%)
Total	69	(100%)	13	(100%)	8	(100%)	77	(100%)	167

TABLE 63

INFANT COMPLICATIONS BY NUMBER OF CLASSES ATTENDED

| Infant Birthweight | Number of Classes Attended | | | | | | | |
	5-15		3-4		1-2		0	
Yes (< 3000 grams)	61	(88%)	13	(100%)	7	(87.5%)	62	(80.5%)
No (> 3001 grams)	8	(29%)	-		1	(12.5%)	15	(19.5%)
Total	69	(100%)	13	(100%)	8	(100%)	77	(100%)	167

TABLE 64

PERCEIVED LABOUR DISCOMFORT BY
NUMBER OF CLASSES ATTENDED

Perceived Labour Discomfort	Number of Classes Attended 5-15		3-4		1-2		0		
Yes	7	(10%)	5	(38.5%)	-		20	(28%)	
No	61	(90%)	8	(61.5%)	8	(100%)	52	(72%)	
Total	68	(100%)	13	(100%)	8	(100%)	72	(100%)	161

TABLE 65

MODE OF DELIVERY BY NUMBER OF
CLASSES ATTENDED

Mode of Delivery	Number of Classes Attended 5-15		3-4		1-2		0		
Yes (Spontaneous Vaginal)	42	(61%)	11	(85%)	7	(87.5%)	60	(78%)	
No (Other)	27	(39%)	2	(15%)	1	(12.5%)	17	(22%)	
Total	69	(100%)	13	(100%)	8	(100%)	77	(100%)	167

TABLE 66

INFANT BIRTHWEIGHT BY EVER-ATTENDANCE AND MOTHER'S CULTURAL BACKGROUND

| | Current Attendance | | | |
| | Yes | | No | |
Infant Complications	Anglo-Saxon	Other Culture	Anglo-Saxon	Other Culture
3000 grams	44 (83%)	41 (98%)	3 (100%)	10 (71%)
3001 grams	9 (17%)	1 (2%)	-	4 (29%)
Total	53 (100%)	42 (100%)	3 (100%)	14 (100%) 112

TABLE 67

INFANT BIRTHWEIGHT BY EVER-ATTENDANCE AND MOTHER'S AGE IN YEARS

| | Current Attendance | | | | | |
| | Yes | | | No | | |
Infant Complications	< 20 Years	20-29 Years	29 Years	20 Years	20-29 Years	> 29 Years
3000 grams	88 (89%)	42 (89%)	4 (80%)	12 (71%)	5 (83%)	-
3001 grams	11 (11%)	5 (11%)	1 (20%)	5 (29%)	1 (17%)	1 (100%)
Total	99 (100%)	47 (100%)	5 (100%)	17 (100%)	6 (100%)	1 (100%) 175

TABLE 68

INFANT BIRTHWEIGHT BY EVER-ATTENDANCE
AND MOTHER'S EDUCATION IN YEARS

Infant Birthweight	Current Attendance						
	Yes			No			
	7-10 Years	11-12 Years	13-19 Years	7-10 Years	11-12 Years	13-19 Years	
< 3000 Grams	12 (92%)	71 (88%)	51 (89.5%)	7 (78%)	6 (60%)	4 (80%)	
> 3001 Grams	11 (8%)	10 (12%)	6 (10.5%)	2 (22%)	4 (40%)	1 (20%)	
Total	13 (100%)	81 (100%)	57 (100%)	9 (100%)	10 (100%)	5 (100%)	175

TABLE 69

INFANT BIRTHWEIGHT BY EVER-ATTENDANCE
AND PARITY

Infant Birthweight	Ever-Attendance				
	Yes		No		
	Primipara	Multipara	Primipara	Multipara	
< 3000 Grams	59 (85.5%)	74 (92.5%)	9 (75%)	8 (67%)	
> 3001 Grams	10 (14.5%)	6 (7.5%)	3 (25%)	4 (33%)	
Total	60 (100%)	80 (100%)	12 (100%)	12 (100%)	173

APPENDIX N

OBJECTIVE III FIGURE AND TABLE

FIGURE 23

PATH MODEL SHOWING PREDICTORS OF USE OF
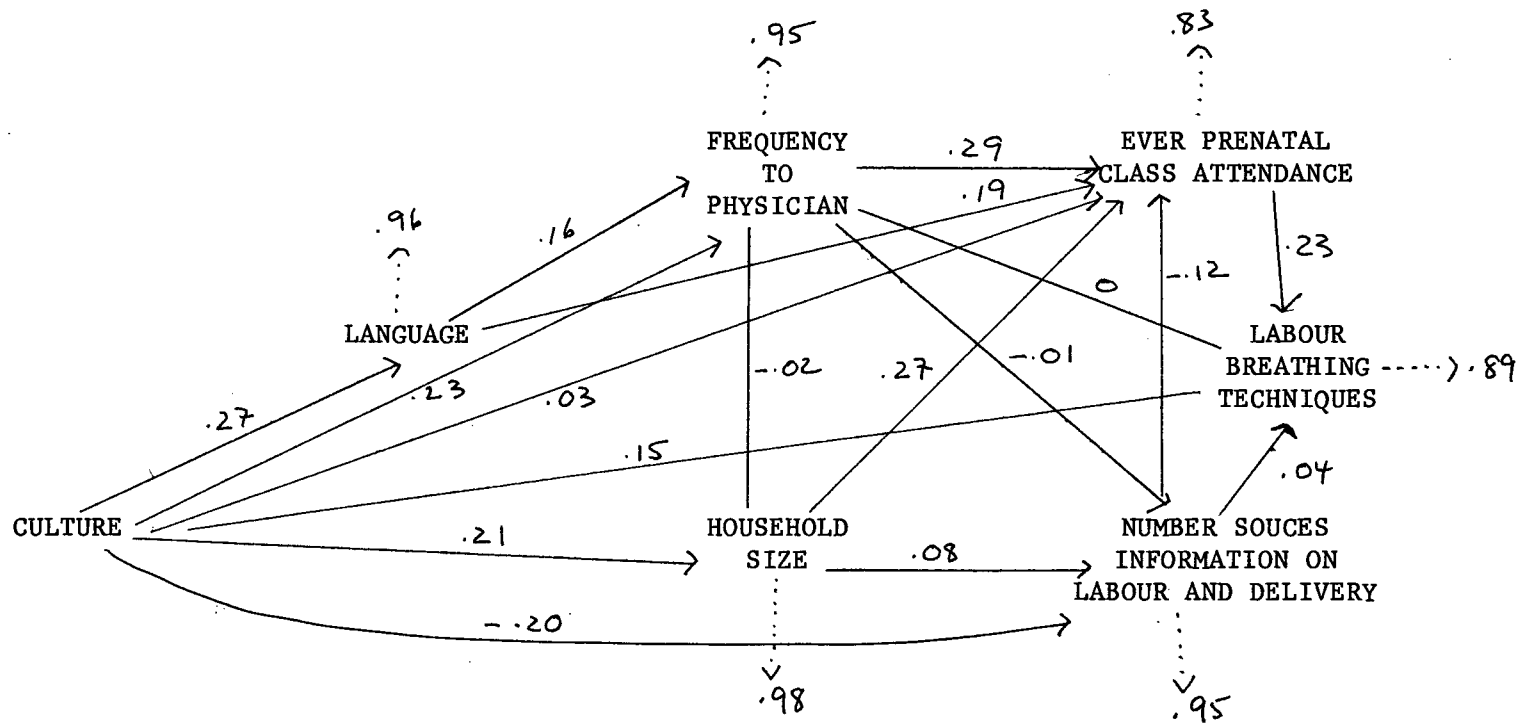**LABOUR BREATHING TECHNIQUES (STANDARDIZED**
BETAS REFER TO DIRECT EFFECTS ONLY)

TABLE 70

PATH COEFFICIENTS FOR PATH MODEL PREDICTING
USE OF LABOUR BREATHING TECHNIQUES

Variable Pairs	Total Covariance (A)	Direct (B)	Causal Indirect (C)	Total A + B (D)	Non-Causal A – D (E)
Labour Breathing Techniques, Ever Attendance	.33	.23	–	.23	.10
Labour Breathing Techniques, Number of Sources of Info on Labour and Delivery	-.04	.04	-.03	.01	-.03
Labour Breathing Techniques, Frequency to Physician	.11	–	.07	.07	.04
Labour Breathing Techniques, Language	.39	.31	.05	.36	.03
Labour Breathing Techniques, Culture	.15	.02	-.16	-.14	.02
Ever Attendance, Number of Sources of Info on Labour and Delivery	-.21	-.12	–	-.12	.09
Ever Attendance, Frequency to Physician	.37	.29	–	.29	.08
Ever Attendance, Household Size	.38	.27	–	.27	.11
Ever Attendance, Language	.33	.19	.05	.24	.09
Ever Attendance, Culture	.24	.03	.10	.13	.11
Number of Sources of Info on Labour and Delivery and Ever Attendance	-.21	-.16	–	-.16	-.05
Number of Sources of Info on Labour and Delivery, Frequency to Physician	-.20	-.10	.22	.12	.08
Number of Sources of Info on Labour and Delivery, Household Size	-.04	.08	.04	.12	.08

PATH COEFFICIENTS FOR PATH MODEL PREDICTING
USE OF LABOUR BREATHING TECHNIQUES

Variable Pairs	Total Covariance (A)	Direct (B)	Causal Indirect (C)	Total A + B (D)	Non-Causal A – D (E)
Number of Sources of Info on Labour and Delivery, Language	-.08	.01	-.04	-.03	-.05
Number of Sources of Info on Labour and Delivery and Culture	-.24	-.20	-.03	-.23	-.01
Frequency to Physician, Household Size	.08	-.02	-	-.02	-.06
Frequency to Physician, Language	.22	.16	-	.16	.06
Frequency to Physician, Culture	.26	.22	.04	.26	-
Household Size, Culture	.21	.21	-	.21	-
Language, Culture	.22	.27	-	.27	-