

A B S T R A C T

In April 1997, 120 women ≤ 16 weeks gestation responded to a survey conducted by the Middlesex-London Health Unit, which identified learning needs of women in their first trimester of pregnancy. This survey was part of a larger community initiative to plan, develop and implement first trimester "Prenatal Health Fairs" in London, Ontario.

A listing of topics identified by women as most salient to their learning needs is included. There was a strong emergence of the need to include environmental health issues in the first trimester curriculum. The ranking of topics was unrelated to age, education and employment status with the exception that employed women were more likely to rank coping with discomforts of pregnancy, reasons for regular prenatal care and physical changes of pregnancy as important. Specific information related to reasons for attending a health fair, best times, locations and methods of advertising is addressed.

A B R É G É

En avril 1997, 120 femmes enceintes de moins de 16 semaines ont répondu à un sondage du bureau de santé de London et Middlesex, sondage visant à identifier les besoins d'apprentissage des femmes au cours du premier trimestre de grossesse. Ce sondage se situe dans le cadre d'une initiative collective plus large visant à planifier, développer et mettre en oeuvre les « Foires santé prénatales » du premier trimestre, à London, en Ontario.

Une liste des sujets identifiés par les femmes comme étant les points les plus saillants de leurs besoins d'apprentissage, est jointe. La question des problèmes de santé environnementale se situait en tête de liste. Le classement des sujets n'était pas lié à la question de l'âge, du niveau d'éducation ou de l'emploi, sauf que les femmes qui occupaient un emploi avaient de plus grandes chances d'accorder plus d'importance aux questions d'inconfort pendant la grossesse, aux raisons pour des soins prénataux et aux changements physiques en cours de grossesse. Des renseignements plus précis dont les raisons de participer à une foire santé, les meilleures dates, les lieux et les modes de publicité sont des sujets abordés.

Learning Needs as Perceived by Women Less Than or Equal to 16 Weeks Pregnant

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In May 1996, the Ministry of Health Ontario released a document¹ which provided guidelines to assist in the planning and implementation of early pregnancy initiatives as outlined in the Mandatory Health Programs and Services Guidelines, 1989.² The objectives for early pregnancy initiatives included a reduction in low birthweight rates, a reduction in perinatal mortality rates, an increase in the percentage of planned pregnancies and an increase in behaviours conducive to healthy pregnancy outcomes.

Low birthweights are associated with higher health care costs for all stages of pregnancy (prenatal, at birth and postpartum), increased infant mortality,^{3,4} serious childhood illnesses and potential problems into adulthood.^{5,6} Women who received prenatal health behaviour advice on smoking, alcohol, diet, weight gain, vitamin supplements, illegal drug use, and breastfeeding are less likely to deliver a low birthweight infant.⁷ To maximize the benefit of prenatal health initiatives and reduce the incidence of first trimester anomalies,^{8,9} programs should target mothers in their early stages of pregnancy, preferably during preconception.

However, a review of the literature identified only one article¹⁰ that reported learning needs as perceived by first trimester pregnant women and the sample size of this study was too small to yield reliable

data. Data that identifies learning needs as perceived by women in their first trimester of pregnancy are necessary to move forward with the implementation of the Ministry guidelines.

Attendance at early prenatal classes is poor. A study at the Ottawa-Carleton Health Department¹¹ which examined attendance of women in prenatal classes, found only 22.9% of pregnant women began classes in their first trimester. The most common reasons cited for not attending early prenatal classes were: insufficient knowledge about early prenatal classes, not considered useful at this time, and not convenient.

At the Middlesex-London Health Unit (MLHU), only 6% of all women attending prenatal classes registered for early classes.¹² The MLHU offers early prenatal classes (Early Bird) and regular prenatal classes. In September 1996, an evaluation of the Education Program for Expectant Families recommended the establishment of Early Pregnancy Health Fairs to replace Early Bird Classes.¹³ The MLHU, situated in London, Ontario (a major urban centre) provides service to 389,616 people¹⁴ in London and Middlesex County. According to 1995 figures released by the Ontario Ministry of Health,¹⁵ Middlesex-London has approximately 5,407 births per year.

The purpose of this study was to generate reliable descriptive information from women who were ≤ 16 weeks pregnant, which would assist in planning and implementing first trimester prenatal health fairs. A Prenatal Health Fair Community Committee chose a 16-week rather than a 12-week (end of first trimester) cutoff as the committee felt that many women do not confirm their pregnancy until 12 weeks, and we would lose many women

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between 12-16 weeks who might benefit from this program. The major objectives were to determine: 1) what information women ≤ 16 weeks pregnant feel should be included in the early pregnancy health fairs; 2) why women feel information early in pregnancy is important; 3) what motivates women to come; 4) what are the best times and locations for the fairs; and 5) what is the best way to advertise.

METHODS

Between April and December 1997, a convenience sample of women whose pregnancy was confirmed and who were ≤ 16 weeks gestation were given a self-administered questionnaire survey. To ensure representation from across the city, questionnaires were distributed through the MLHU prenatal program, two midwives, three university-affiliated medical centres, and eight private family physicians. Health care professionals and clerical staff were instructed to give the questionnaires to all their clients who met the criteria (confirmed pregnancy and under 16 weeks pregnant), ask them to complete the survey and return it to the researchers in the self-addressed stamped envelope. A covering letter describing the purpose of the questionnaire was included. There was no identifying information on the questionnaires.

The eight-page questionnaire was divided into four sections. Section 1 contained 45 topics for respondents to rate as to whether the topics should be included now at the prenatal health fairs, included at later prenatal classes, or not included at all. To identify the 45 topics, an exhaustive list of 89 items was compiled from the literature, prenatal curriculum and expert opinions. This list was distributed to 41 people (physicians, nurses and consumers). They were asked to rate whether the topics were necessary, nice to know, or not necessary for women in their first 16 weeks of pregnancy. Of the 39 questionnaires returned, those which ranked highest as necessary and nice to have, were included in the major study. The topics were then categorized under the headings of physical factors, nutrition, laboratory tests, infections, exercise, smoking/alcohol/drugs, environmental factors, psychosocial factors, labour and birth information, infant/parent-

Age of Mother (years)	%	Employment Status	%
≤ 20	2	Employed	80
21-25	13	Unemployed	14
26-30	40	No Response	6
31-35	40		
36-40	2		
41-45	3		
Highest Level of Education	%	First Pregnancy	%
Elementary	0	Yes	71
Secondary	16	No	26
Post-Secondary	80	No Response	3
Other	4		
Number of Weeks Pregnant	%		
1-4	1		
5-8	12		
9-12	34		
13-16	53		

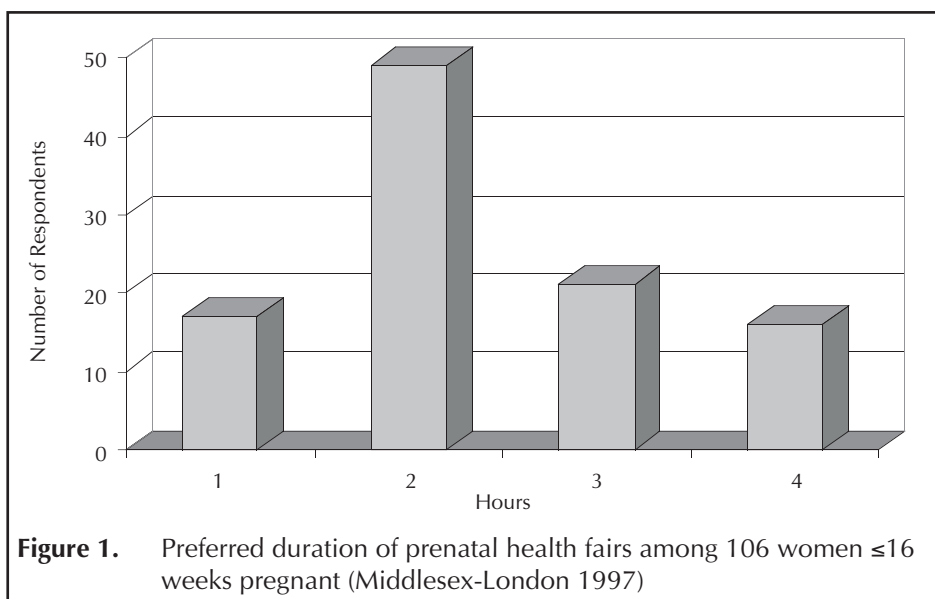


Figure 1. Preferred duration of prenatal health fairs among 106 women ≤ 16 weeks pregnant (Middlesex-London 1997)

ing information, and other community resources. Space was provided for respondents to list additional topics.

Section two had both open and closed-ended questions. In section two, respondents were asked about methods of presentation, importance of prenatal health fairs in the first 16 weeks of pregnancy, what would motivate attendance, preferred time, location and length of fair, and the best places to advertise. Section three and four had closed-ended questions asking demographic information. The questionnaire was developed by the sub-committee of the Prenatal Health Fair Community Committee, pilot tested and revised.

Descriptive analyses using proportions and the Fisher's Exact Test were undertaken

with EXCEL and SPSS-PC computer packages. Responses of similar content to open-ended questions were categorized by one of the authors (Y.C.).

RESULTS

Of the 265 questionnaires distributed through family physicians, midwives, and prenatal registrations, 120 (45%) were completed. Of the 120 returned questionnaires, 106 met the selection criteria, 11 women were more than 16 weeks gestation and 3 women did not provide information on gestational age.

The majority of women were between 26-35 years of age (80%), employed (80%), and had a post-secondary educa-

TABLE II
Rating of Topics for Inclusion in Prenatal Health Fairs by 106 Women ≤ 16 Weeks Pregnant (Middlesex-London 1997)

	%
Nutritional guidelines	99.0
Caffeine/herbal tea/aspartame	97.2
Folic acid/iron/calcium/vitamin supplements	97.2
Fetal development from pregnancy to birth	94.3
Prescription/non-prescription medications	91.5
Physical changes of pregnancy	91.5
Booklist for pregnancy and childbirth	89.6
Emotional changes of pregnancy	88.6
Reasons for regular prenatal care	87.7
Computer monitors/video display terminals	87.7
Saunas/hot tubs	86.7
Paint fumes	86.7
Prenatal classes (what is available)	85.8
Insecticides	85.0
Weight gain recommendations	84.9
Routine blood testing	83.9
Exercise/fitness/sports	83.9
Effects of smoking/alcohol/drugs on the fetus	83.0
Radiation/electro-magnetic fields	83.0
Coping with a miscarriage	80.1
Other prenatal community services (e.g. midwifery)	80.1
Working during pregnancy	77.3
Genetic screening	74.5
Seatbelts during pregnancy	74.5
Bacterial/viral infections	74.5
How to quit smoking	72.6
Ultrasound	70.7
Sexuality	67.9
Sexually transmitted diseases	66.9
Dental health	65.1
Stress management	65.0
Coping with discomforts of pregnancy	64.1
Wife/spousal abuse	58.4
Massage therapy	48.1
Multiple pregnancies	46.2
Resources for battered women	46.2
Hospital information	35.8
Preparation for mothering	33.9
Preparation for fathering	33.0
Parenting resources	20.7
Breastfeeding resources	13.2
Infant feeding	13.2
Infant safety and equipment	12.2
Proper use of infant car seats	9.4
Taking care of your baby	8.4

tion (80%). This was a first pregnancy for 71% of the mothers. Fifty-three percent of the women were between 13-16 weeks gestation, the remainder were <12 weeks pregnant. (See Table I)

The top 10 topics women felt should be included in the first trimester health fairs were: nutritional guidelines; caffeine/herbal tea/aspartame; folic acid/iron/calcium/vitamin supplements; fetal development; prescription/non-prescription medications; physical changes; booklists for pregnancy and childbirth; emotional changes; reasons for prenatal care; and

TABLE III
Preferred Methods of Presentation Among 106 Women ≤ 16 Weeks Pregnant (Middlesex-London 1997)

	%
Pamphlets	74.5
Demonstrations	73.0
Videos	70.7
Speakers	66.0
Displays	64.1
One to one discussion	37.7
Hands on	35.8
Computer interaction	15.0
Games	6.6

computer monitors/VDT terminals (See Table II for a complete listing of topics and ratings). The majority of environmental health topics which are not commonly found in prenatal curricula ranked in the top 20 of 45 ranked topics. Additional topics requested for inclusion at the Prenatal Health Fairs were asthma and allergies in pregnancy; finances; coping with a second pregnancy; teen pregnancy; pregnancy in older women; and pets.

To determine if the desire to include a topic was a function of sociodemographic status, the relationship between age, education and employment status and a respondent's perceived desire to discuss a topic now versus later was determined for all of the topics using Fisher's Exact Test. Three topics – coping with discomforts of pregnancy, reasons for regular prenatal care, and physical changes of pregnancy – were significantly ($p < 0.05$) associated with employment status. No association was found between the topics and age or education.

Pamphlets, demonstrations, videos, speakers and displays were preferred methods of presentations (Table III). One-to-one discussions and hands-on activities ranked lower as did computer interaction.

Seventy-two percent of the women felt it was important to attend a health fair in the first 16 weeks of pregnancy and 24% were undecided. Respondents who felt health fairs were important cited the following: if it was a first pregnancy, to get knowledge and information, have questions answered, and to make necessary lifestyle change. Those who were undecided stated that it was dependent upon the individual's knowledge, health habits and type of care they were receiving, and available resources. Seventy-six percent of

TABLE IV
What Would Encourage Women ≤ 16 Weeks Pregnant to Come to a Prenatal Health Fair (Middlesex-London 1997)

	%
Get information/have questions answered	76.3
Door prizes	18.4
Pamphlets	11.4
Samples/discount coupons	10.5
Speakers	5.7
Advertising	5.0
Timing	4.4
Family doctor	4.4
Network/meet new people	3.5
Location	3.5
Cost	2.6
Demonstrations	2.6

women felt receiving information and having their questions answered were the key motivators for their attendance at a prenatal health fair (Table IV).

The preferred locations for the health fairs included community centres (67%) and school gymnasiums (57%), followed by a downtown location (25%), churches (24%) and malls (21%). Evenings were the most preferred times for the fairs (Monday and Wednesday, followed by Tuesday and Thursday) and the afternoon on weekends. Sixty-eight percent of the women (Figure 1) wanted a fair lasting 2-3 hours. The best ways for women to find out about prenatal health fairs was at the doctor's office (92%) and through the newspaper (56%).

DISCUSSION

Data on employment and education of women aged 26-35 years in the general population of London and Middlesex were not available. Such data would have been used in comparison with our sample in order to better establish generalizability of our data. However, our sample was selected from standard practice settings and the inclusion criteria were quite broad. Therefore, the information gleaned from this study should be useful for planning programs in similar locations.

This descriptive study provided useful information, and strategies from a client's perspective, to plan, develop and implement first trimester prenatal health fairs. Topics identified for inclusion in the first trimester prenatal curriculum concurred with those viewed as important by clini-

cians.¹⁶ However, the need to include information on specific environmental health issues was evident. The specific environmental topics were radiation, computer monitors/video display terminals, saunas/hot tubs, paint fumes and insecticides. With the high level of employment and education in our sample, the use of computers in the workplace maybe more prevalent and respondents may be more aware of potential environmental health risks in pregnancy. Additional environmental topics identified were pets and environmental allergens. Overall, the number of additional topics identified was small, which suggests that the listing of topics in the questionnaire is comprehensive.

Employment status appears to be a better indicator of topics selected than age or education. Three topics (coping with discomforts of pregnancy, reasons for regular prenatal care and physical changes of pregnancy) were significant using Fisher's Exact Test. As 80% of the women were employed, they would be interested in determining what adjustments were needed in the workplace to accommodate the discomforts and physical changes of pregnancy and the scheduling of regular prenatal care. Future research should carefully examine the association between employment and topics, to further refine the prenatal curriculum.

Pamphlets were the preferred method of presentation followed by demonstrations. As 80% of the women had post-secondary education, many of the women preferred to engage in self-directed learning through reading, or taking material home that they could read when they chose. One-to-one discussions ranked much lower. Women at this stage of pregnancy are seeking information and may not feel well enough informed for individual discussion. Consistent with this, Sullivan¹⁰ found that

primiparas chose to be informed before engaging in prenatal classes so as not to appear ignorant. First trimester mothers are at different levels of acceptance of the pregnancy, and may not wish to make this information public.

The best times to hold an event are Monday and Wednesday evenings with fairs lasting 2-3 hours. Community centres and schools were most frequently chosen locations for health fairs. Perhaps other sites which did not rate as highly, such as malls and churches, were viewed to be more public. Pregnant couples may want a location where they can focus specifically on the pregnancy, and a location which is safe for them to disclose their news.

Physicians can play a key role in advertising the health fairs. Ninety-two percent of the women felt the best way to find out about the health fairs is through the doctor's offices. However, respondents ranked physicians very low (4.4%) as motivating them to attend a fair. Information and having questions answered, so that women could make better choices for themselves and their babies, were cited as the most salient factors to encourage mothers to attend a prenatal health fair.

CONCLUSION

The learning needs identified by this sample of women a 16 weeks gestation can be used to validate current practice and plan future offerings. Too often programs are based only on the professional's view of client needs. Programs that reflect both the client's and practitioner's needs will generate superior programs.

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