
ARTICLE

Aboriginal and Immigrant Women's Food Choices and Practices in Pregnancy: A Scoping Review

by Gina M. A. Higginbottom, PhD; Fabiana Mamede, PhD; Rubina Barolia, PhD (candidate); Helen Vallianatos, PhD; and Thane Chambers, MLIS

ABSTRACT

Dietary patterns of pregnant women are closely related to cultural values, beliefs, and various social and economic factors. Knowledge of the food choices and practices among pregnant Aboriginal and immigrant women, who both are vulnerable to poor pregnancy and birth outcomes, is essential for midwives and other maternity care providers to provide culturally appropriate care during pregnancy. A “scoping review,” guided by Arksey and O’Malley’s framework, was performed to examine and outline the extent, range, and nature of empirical evidence on immigrant and Aboriginal women’s food practices during pregnancy. Assisted by an information scientist, a systematic search strategy without language or date restrictions was implemented in several electronic databases to identify primary research articles on the subject. Two reviewers independently screened, selected, and charted the data, and team consensus was used for discrepancies. A descriptive analytical framework was followed to depict the existing narrative account of the included studies. Seventeen articles describing seven qualitative and ten quantitative research studies were selected for review, and nine themes were identified. This review will help midwives and other maternity care providers gain an understanding of the importance of culture for Aboriginal and immigrant women’s diets and of existing barriers so that prenatal care can be individually tailored to include nutritional advice and to optimize culturally appropriate care. More individual studies that focus on the cultural aspects of immigrants and Aboriginal pregnant women are needed to improve prenatal care.

KEYWORDS

emigrants and immigrants, indigenous population, pregnant women, nutrition during pregnancy, cultural competency

This article has been peer reviewed.

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ARTICLE

Choix et pratiques alimentaires chez les Autochtones et les immigrantes pendant la grossesse : Analyse exploratoire

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RÉSUMÉ

Les comportements alimentaires des femmes enceintes sont étroitement liés à leurs valeurs culturelles, à leurs croyances et à divers facteurs sociaux et économiques. Il est essentiel que les fournisseurs de soins cherchent à obtenir des connaissances au sujet des choix et des pratiques alimentaires des Autochtones et des immigrantes enceintes (lesquelles sont particulièrement susceptibles de connaître de piètres issues de grossesse et d'accouchement) de façon à pouvoir leur offrir des soins appropriés au plan culturel pendant la grossesse. Une analyse exploratoire fondée sur le cadre d'Arksey et O'Malley a été menée pour examiner et définir l'ampleur, la portée et la nature des données empiriques sur les pratiques alimentaires des Autochtones et des immigrantes pendant la grossesse. Avec l'aide d'un documentaliste, nous avons mis en œuvre une stratégie de recherche systématique (sans restrictions en matière de langue ou de date) visant plusieurs bases de données électroniques, et ce, en vue d'identifier les articles traitant d'études originales menées sur le sujet. Deux analystes ont procédé (de façon indépendante) au tri et à la sélection des données, et en ont assuré la présentation sous forme graphique; les disparités ont fait l'objet de décisions par consensus d'équipe. Un cadre d'analyse descriptive a été utilisé pour décrire le compte-rendu narratif existant des études visées. Dix-sept articles décrivant sept études qualitatives et dix études quantitatives ont été sélectionnés à des fins d'analyse, et neuf thèmes ont été identifiés. Chacun de ces thèmes est décrit au moyen d'exemples tirés des résultats de ces études. Cette analyse aidera les fournisseurs de soins de santé et de services sociaux à mieux comprendre l'importance de la culture en ce qui a trait aux régimes alimentaires des Autochtones et des immigrantes (ainsi que les obstacles existants en la matière), ce qui leur permettra d'adapter les soins prénataux offerts à cette clientèle (y compris les conseils traitant de la nutrition) afin d'en optimiser le caractère approprié au plan culturel. La tenue d'un plus grand nombre d'études axées sur les aspects culturels propres aux Autochtones et aux immigrantes enceintes s'avère requise pour que l'on puisse améliorer les soins prénataux qui leur sont offerts.

MOTS CLÉS

Émigrantes et immigrantes, population autochtone, femmes enceintes, nutrition pendant la grossesse, compétence culturelle

INTRODUCTION

Diet is one of the most important factors affecting pregnancy outcome.¹⁻³ Evidence has shown that a healthy diet with recommended vitamin supplements reduces the risk of abnormal gestational fetal growth and development.^{4,5} The intake of nutritionally sound food during pregnancy reduces the risk of a mother's delivering a preterm, low-weight, and macrosomic baby⁶ as well as the risk of other adverse outcomes such as gestational diabetes, pre-eclampsia, and some respiratory diseases.⁷ The dietary patterns of pregnant women are closely related to cultural values, beliefs, and various economic factors.⁸ These factors can make eating a healthy diet during pregnancy challenging. This is particularly true for vulnerable groups such as immigrant and Aboriginal women.

Global migration contributes to increasing diversity in Canada, which has historically used immigration as a policy for expanding its population.⁹ It is also associated with increased physical and psychological illnesses that have led to the emergence of new disease patterns (such as malnutrition) for pregnant women, high maternal mortality, and an increased risk of perinatal mortality and infants who are small for gestational age (SGA).¹⁰ In general, although regulatory forces tend to ensure that immigrants enter immigrant-receiving countries such as Canada in relatively good health, many factors contribute to a decline in health among first- and second-generation immigrants, a phenomenon known as the "healthy-immigrant effect."¹¹ Some of these contributing factors are acculturation and the stress of relocation,¹² the unavailability of traditional health care providers, a lack of faith in Western medicine, and guilt from not following religious traditions.¹³

Another concurrent demographic pattern in Canada is the increasing growth of Aboriginal populations. For instance, between 1996 and 2006, the Aboriginal population in Canada grew by 45%, almost six times faster than the non-Aboriginal population, whose growth rate was 8%.¹⁴ It is also widely reported that Indigenous people as a group face numerous health challenges as compared to the general population because of a complex interplay of factors such as socioeconomic conditions (e.g., poverty and overcrowded housing) rooted in historical colonialism.¹⁵

Immigrant and Aboriginal women are considered vulnerable because they face multiple challenges in terms of receiving culturally appropriate care, specifically during pregnancy.^{16,17} Language barriers and discriminatory policies and practices, among other factors, can create situations in which a negative trajectory of events ranging

from simple miscommunication to possibly life-threatening incidents may occur.¹⁸ Moreover, Aboriginal and immigrant women are at higher risk for adverse pregnancy and birth outcomes; these health challenges are rooted in social, economic, and political inequities and in (especially for Aboriginal women) a history of colonization.^{19,20} Therefore, one must consider the health care needs of Aboriginal and immigrant women within these complex contexts while also appreciating the large diversity in ethnocultural beliefs and traditions.

Epidemiological studies of immigrant populations in Canada and other immigrant-receiving countries show high rates of adverse perinatal outcomes among migrant mothers. Bollini and colleagues compared data collected in European countries from 1966 to 2004 that measured the pregnancy outcomes of native-born women versus immigrant women.²¹ After adjusting for maternal age and parity, they found that immigrant women experienced a greater prevalence of having low-birth-weight infants (43%), preterm deliveries (24%), perinatal mortality (50%), and congenital malformations (61%). A Canadian study also showed that recent immigration is associated with a greater prevalence of low-birth-weight and SGA infants.²² Poor birth outcomes such as stillbirths, low-birth-weight infants, and prematurity are also reported among Aboriginal populations.²³ Aboriginal and immigrant women have a greater chance of developing gestational diabetes, which heightens their risk of giving birth to macrosomic babies (birth weights greater than 4 kilograms)^{24,25} and developing pre-eclampsia during pregnancy. It also predisposes women and their offspring to obesity and type 2 diabetes.²⁶ The existing literature sends a clear message that the risk of pregnant immigrant and Aboriginal women and their children are higher than the Canadian national average.

There is evidence that some of the outcomes associated with pregnancy for immigrant women are highly related to food consumption. These outcomes include dieting, with low maternal weight gain (compromising both newborn and maternal health);²⁷ genetic anomalies such as neural tube defects due to lack of folic acid intake;²⁸ and maternal anemia, which increases the risk of preterm delivery.²⁹ These negative outcomes may be due partly to the adoption of Western dietary patterns by immigrant mothers, but another potential cause is the availability of calorically dense but nutrient-scarce foods in the "obesogenic" neighbourhoods where many immigrants reside.³⁰ Conversely, another issue is that some women choose to eat less than the normal requirements during pregnancy and the postnatal period

in an effort to maintain their figures. The implementation of nutritional counselling and dietary guidelines provided to these mothers has not been successful.²⁸ In regard to pregnant immigrant women, it has been suggested that this is because “appropriate prenatal nutritional and diet education requires the legitimization and incorporation of the pervasive traditional beliefs and practices of immigrant women, which they often adhere to despite their new milieu.”¹⁸

Because nutrition is so crucial to a healthy pregnancy, health care providers need a knowledge of the food choices and practices of pregnant Aboriginal and immigrant women to provide safe and culturally appropriate care during pregnancy. The great challenge for health promotion and health care providers is to develop dietary behaviour interventions appropriate to the needs of Aboriginal and immigrant women. An understanding of the food choices and traditional cultural activities and behaviours around pregnancy and childbirth is essential for the health care midwives and other maternity care providers who work with women from these population groups.

A “scoping review” was performed to examine and outline the extent, range, and nature of empirical evidence about immigrant and Aboriginal women’s food practices and nutritional intake during pregnancy and childbirth. This review is a component within a larger qualitative study that was designed to “understand ethnocultural food and health practices and how these intersect in a particular social context of cultural adaptation and adjustment in order to improve the care-giving capacities of health practitioners (i.e., maternity nurses) working in a multicultural perinatal clinic.”¹⁸ The results of this project will provide practitioners with (1) an understanding of the cultural differences and other influencing factors that affect immigrant and Aboriginal women’s dietary choices and (2) new tools that will make counselling and other interventions more effective.

METHODS

Research Questions, Framework, and Target Populations

Our research questions evolved from the multicultural milieu of the perinatal clinic with which we were partnered, with the hope of addressing the challenges practitioners face in working with such a diverse range of ethnocultural groups.¹⁸ These research questions were the following:

1. What is known from existing literature about immigrant and Aboriginal women’s food choices and practices, including relevant ethnocultural and health

beliefs, during pregnancy and birth?

2. What is known about the effects of immigrant and Aboriginal women’s food choices and practices during pregnancy on these women’s health outcomes?

For this review, we used Arksey and O’Malley’s framework for conducting scoping reviews.³¹ This five-stage framework includes (1) identifying the research question with the target population(s), (2) identifying relevant studies (and selecting a suitable team having the methodological and subject expertise), (3) selecting and reselecting the relevant studies, (4) charting the data, and (5) collating, summarizing, and reporting the results.

The target populations were pregnant immigrant and Aboriginal women. We have used the definition of “immigrant” proposed by the Canadian Council of Refugees: “a person who has left the country of birth settled permanently in another country.”³² However, we acknowledge that the term is largely heterogeneous and includes economic migrants and skilled workers, documented and undocumented residents, refugee claimants, refugees, asylum seekers, and students.³³ We chose to focus on studies in which the participants—or subjects, in some cases (i.e., retrospective reviews)—were identified as being first generation, thus foreign-born to where they were residing. The Aboriginal population of Canada was defined as the original people of the country and their descendants, also referred to as First Nations, Inuit, Métis, and native.¹⁵

Identification and Selection of Studies

In October 2011, one of the authors (T. C.), a research librarian, searched the following databases: Ovid MEDLINE In-Process & Other Non-Indexed Citations, Ovid Embase, EBSCOhost CINAHL, Science Citation Index (via Web of Science), the Social Sciences Citation Index, the Science Conference Proceedings Index, and the Social Sciences Conference Proceeding Index. The search used a variety of keywords and controlled vocabulary terms to retrieve articles about the food selections and practices of Aboriginal and immigrant women during pregnancy, including dietary and nutritional patterns and the ethnocultural dimension of food choices specific to pregnancy. The MEDLINE search can be viewed in Appendix 1. The search strategy was modified for the other databases to use appropriate controlled vocabulary terms, keywords, and search syntax. No language or date restrictions were used in the searches. In addition, the reference lists of selected articles were handsearched, and citation chaining was performed for

relevant articles.

A screening tool (Appendix 2) was used by two independent reviewers to identify potentially relevant studies. The main inclusion criteria consisted of qualitative and quantitative research studies of immigrant or Aboriginal pregnant women (using the previously described operational definitions of these groups) that addressed issues regarding food choices and practices and nutritional intake or adequacy. Articles that were primarily related to dietary guidelines, micronutrient requirements, and general social and cultural issues were excluded. After screening, all potentially eligible papers were retrieved in full for selection, and reasons for exclusion were documented. Team consensus was used for final selection.

Data Extraction and Synthesis

Data were charted independently by two reviewers using a standardized data charting sheet. We gathered general and specific information related to each study as applicable to our research questions. A descriptive analytical framework that depicts the existing narrative account of the included studies was followed. Quality assessment was not determined, because the purpose of scoping reviews is to narrate the findings of existing literature about the phenomenon under investigation without determining the robustness of the studies.³¹ For the purpose of clarity, qualitative and quantitative studies were synthesized separately. At the initial stage, research assistants independently collated and summarized the findings from the included studies. In the second stage, both investigators discussed and merged their findings, using discussion and based on consensus. Findings were then agreed upon by the entire team, which included the study's principal investigator. The final synthesis resulted in six qualitative and three quantitative themes derived from the respective articles.

RESULTS

Study Selection and Characteristics

Our search strategy resulted in 1,255 citations. Following the removal of duplicates (538) and screening through the pre-established inclusion criteria to answer our objectives, 99 studies were retrieved in full for further review, resulting in the selection of 17 articles (7 qualitative and 10 quantitative) for final review. Figure 1 depicts the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of the search, screening, and selection process,³⁴ including the reasons for excluding

reviewed papers. The data-charting step resulted in Tables 1 and 2, which informed the team's synthesis as described below.

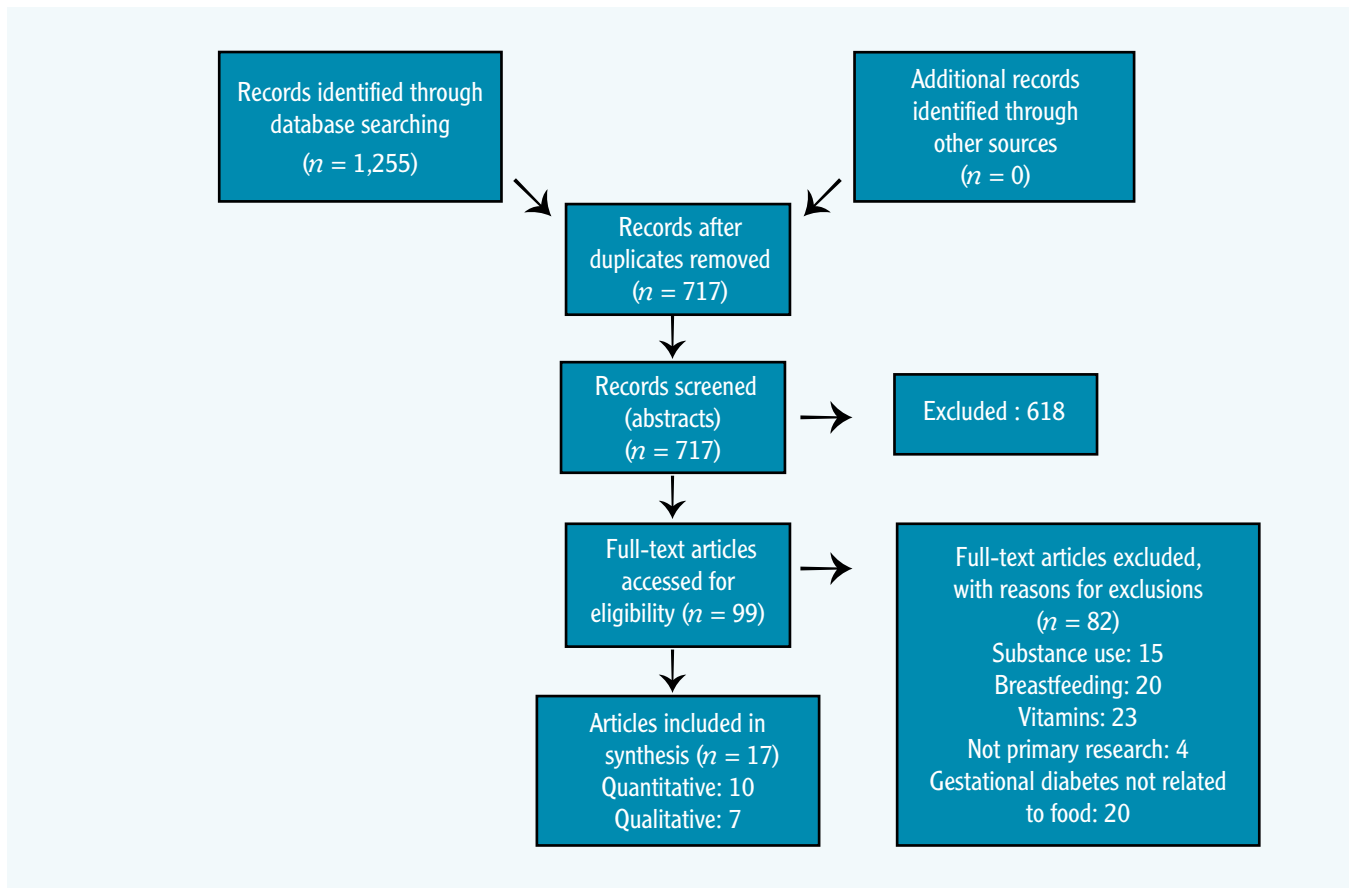
Qualitative Findings

Of the seven qualitative studies that were reviewed, six focused on immigrant pregnant women and one studied Aboriginal pregnant women. The study focusing on Aboriginal women was conducted in Canada,³⁵ whereas the studies on immigrant populations included women of Mexican background living in the United States,^{36,37} women of Punjabi and German background living in Canada,^{28,38} women of Somalian origin living in Sweden,¹⁰ and women of South Asian descent living in Australia.³⁹ The six major themes derived from the papers were (1) cultural practices and beliefs regarding the perinatal period, (2) family and social support during pregnancy and delivery, (3) healthy pregnancy, (4) weight gain issues, (5) concern for the health of the baby, and (6) specific food items.

Cultural Practices and Beliefs Regarding the Perinatal Period

All of the qualitative studies identified the importance of dietary or food-related cultural practices during pregnancy. However, none focused solely on food choices. Grewal et al.,²⁸ Kulig et al.,³⁸ Bernosky de Flores,³⁶ and Bandyopadhyay et al.³⁹ studied immigrant mothers' cultural practices during pregnancy and the childbearing period. Essén et al.¹⁰ explored the attitudes, strategies, and habits of immigrant women in relation to pregnancy and childbirth. Topics included dietary practices, religious rituals, values and beliefs related to the fetus, maternal health, and the role of family members and support groups during pregnancy. In their naturalistic inquiry, Grewal et al.²⁸ found that most women in a Punjabi community followed modified cultural practices, particularly as related to eating specific foods during pregnancy to maintain health during and after pregnancy. However, some women did not express satisfaction with modifying their practices to integrate into the Canadian context, as they felt pressured to acculturate and assimilate. They struggled to balance traditional cultural beliefs with North American practices, and this may have affected their emotional and physical well-being. For example, the Punjabi women believed that chilia (40 days of rest after delivery) provides adequate rest for a woman to regain her health and strength. Women who do not go through chilia are thought to risk ill health in later life.

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of the search, screening, and selection process, including reasons for exclusion.



The exploratory descriptive study by Kulig et al. also found that Low German-speaking Mennonite immigrant women have culturally specific knowledge, beliefs, and practices related to childbearing.³⁸ These Mennonite immigrant women avoid the strong fumes of cleansing solutions or soap because they believe that these fumes may cause miscarriage. They also avoid spicy foods because these are perceived to be harmful to the baby. Consumption of certain foods such as milk or eggs are also not encouraged because these are believed to cause nausea and vomiting. On the other hand, food cravings during pregnancy are given importance because it is thought essential for women to eat what they crave during pregnancy. Similar findings were expressed by pregnant Mexican immigrants, who consider dairy products to be “heavy food” that may cause nausea and vomiting.³⁶ Certain rituals and ceremonies performed by the family in the country of origin are not always continued in the new host community. For example, having to forego *jholabharai* (a celebration and gift-giving ceremony at the beginning of the second trimester) and

bidah (movement into the mother’s home during the later stages of pregnancy) may negatively impact the emotional well-being of Punjabi immigrant women.²⁸

Thematic analysis of the narratives of South Asian immigrant women revealed that they may have difficulty following dietary advice if diagnosed with gestational diabetes. They believed that weight gain was important for their baby’s growth and development. Moreover, they were dissatisfied with the nutritional advice provided by health care practitioners in regard to caloric reductions in their diet and regular exercise to control weight.³⁹ All qualitative studies highlighted the importance of care providers’ understanding the diversity in the cultural practices of immigrant pregnant women when helping to promote healthy pregnancy outcomes.

Family and Social Support during Pregnancy and Delivery

Several qualitative studies pointed out that a major challenge for immigrant pregnant women can

be the roles played by partners, family members, and social supports during pregnancy, especially since many immigrant women are away from their extended family and communities.^{10,28,36,37} Immigrant women expressed feelings of loneliness and missed the social support that they could receive in their own countries.¹⁰ Pregnant women received support from their husbands; however, female relatives such as mothers or mothers-in-law, who are normally considered the primary support persons during pregnancy, were not always available to immigrant women. Female family members also play an important role in providing dietary advice to pregnant women and were identified as being the preferred providers of this information.^{28,37} Their absence means that husbands play a more important role in dietary decisions in the new country, providing suggestions about food and helping with daily household chores during a pregnancy. However, husbands are often busy, and thus additional social support is needed to maintain a healthy pregnancy.

Healthy Pregnancy

Immigrant women considered the role of diet important for maintaining a healthy pregnancy. Women in several studies considered drug and alcohol use to be an unhealthy practice during pregnancy.^{28,37,38} Still, a few participants reported craving harmful substances such as alcohol and stated that one must be careful not to drink too much because it is harmful to the baby.³⁸ Some Aboriginal and immigrant pregnant women spoke of their experience of food cravings. They viewed these food cravings as part of a healthy pregnancy and thought their consumption of such foods good for their babies.^{35,39} Aboriginal women with gestational diabetes found that it was very frustrating to be expected to ignore cravings when their blood sugar levels were high.³⁵

Research also found that immigrant women were concerned about how their emotional well-being affected their pregnancies. Bernosky de Flores reported that the women felt that a healthy pregnancy should be “worry free” and not mentally stressful.³⁶ Issues related to finances, social status, and loneliness were thought to cause an unhealthy pregnancy and to lead to adverse outcomes.

Weight Gain Issues

Overall, immigrant and Aboriginal women were concerned about the weight and adequate growth of their babies. However, a few immigrant women were purposefully not eating enough because they believed that too much

food would result in a large baby and hinder a vaginal birth. One Somalian woman stated, “During pregnancy I ate very little. I was afraid of great ruptures or being delivered by caesarean section.”¹⁰ Other pregnant women felt that adequate nutrition and food were essential for healthy fetal growth. In particular, First Nations participants in one study stated that they needed to “eat for two people.” One woman who gained excess weight during pregnancy stated, “I think that most pregnant ladies do have that in their head that they’re eating for two now. And like that’s what I, that’s what I believe, that you’re eating for two.”³⁵ Bandyopadhyay et al. reported that one Punjabi immigrant woman with gestational diabetes stated that if “your diet is restricted, and the quantity is reduced, and you have limited choice, then the baby does not get proper nutrition to grow” and that if the “mother does not gain weight in pregnancy, then how would the baby grow?”³⁹

Concern for Health of the Baby

Bandyopadhyay et al. found that immigrant and Aboriginal study participants were more worried about “their unborn child’s well-being than their own health. The ‘important’ thing for women was to have a healthy baby, and they were prepared to modify their lifestyle this time, ‘your only thought is for the baby and for a favourable pregnancy outcome.’”³⁹ Similarly, Bernosky de Flores found that immigrant women felt that motherhood is a life commitment and that one needs to sacrifice many things to receive a healthy child.³⁶

Specific Food Items

Immigrant women were reported to believe that food can be “good” or “bad” during pregnancy. Most felt that “light” foods such as fruits and vegetables are good to consume during pregnancy, whereas some foods considered “hot” should be eaten during the postpartum period. It is believed that “hot” food has a hot bodily effect that is essential for healing and recovery. For immigrant Punjabi women in Canada, Grewal and colleagues listed hot foods as dahl (lentil soup); khicheri (lentil soup with rice), usually cooked in ghee (clarified butter) and served with roti (flatbread); chai (fennel tea with ginger); and ginger curry.²⁸ Low income and the higher cost of healthy foods were identified as barriers to healthy eating by First Nations women interviewed by Black et al.³⁵

Quantitative Findings

Ten quantitative studies were reviewed: eight focused

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Table 1. Study Characteristics of Qualitative Studies

Study	Location	Participants	Participants' Ethnicity	Methodology	Research Purpose	Data Collection and Analysis	Main Relevant Outcomes
Bandyopadhyay et al. ³⁹	Melbourne, Australia	17 women aged 23–33 yrs (median, 28 yrs)	South Asian	Qualitative approach	To explore lived experiences and understandings of South Asian women in Melbourne, Australia, after diagnosis of gestational diabetes mellitus	In-depth interviews using interview guide Thematic analysis with manual reading and re-reading transcripts, identifying categories, then emerging themes and subthemes. The interrelationship of themes was summarized for discussion	Dietary advice received was seen to be challenging in the context of culturally different food habits; consequently, managing diet after diagnosis proved difficult. Different attitudes to exercise in pregnancy also raised issues for women. Women said they would try their best to maintain lifestyle modifications postnatally but were uncertain about sustaining these in the long term.
Bernosky de Flores ³⁶	Midwest region of USA	11 women (age range, 22–47 yrs)	Mexican	Ethnography	To describe a healthy mother, a healthy pregnancy, a healthy baby, and the resources essential for achieving these goals from the perspective of Mexican women	Semifocused ethnographic interviews	Healthy mothers have good nutrition and abstain from substance use. Healthy pregnancies are worry-free and tranquil, and healthy behaviours are supported by networks of people with good morals. Information needs include vitamin supplementation before and after pregnancy, and family planning.
Black et al. ³⁵	Rural prairie reserve, Canada	13 women aged 18 years and older	First Nations	Naturalistic inquiry using focused ethnography	To understand the factors that contribute to prenatal weight gain among First Nations women living on a reserve	Semistructured interviews Concurrent data collection and analysis using Mayan's procedures for latent content analysis	Themes related to healthy eating, physical activity, and prenatal weight gain became apparent. There are multiple, interconnected influences on eating, physical activity, and (in turn) prenatal weight gain. Personal factors and social environment influenced eating and physical activity both positively and negatively, whereas the reserve's economic and physical environment negatively influenced eating and physical activity.
Essén et al. ¹⁰	Sweden	15 women (age range, 20–55 yrs)	Somalian	Qualitative descriptive	To explore the attitudes, habits of Somalian immigrant women related to pregnancy and childbirth, gain an understanding as to how cultural factors might affect perinatal outcome.	Interpreter-assisted qualitative in-depth interviews	Themes: pregnancy experience, nutrition habits, social network, genital mutilation. Related to "survival behaviours", many voluntarily decreased food intake in order to have a smaller fetus, an easier delivery and to avoid caesarean section. Health care providers need to become aware of these women's motives to enable sensitive perinatal surveillance.
Grewal et al. ²⁸	British Columbia, Canada	15 women (age range, 21–30 yrs (mean, 25.6 yrs))	Punjabi	Naturalistic inquiry (Lincoln and Guba)	To describe the knowledge and cultural traditions that surround new-immigrant Punjabi women's perinatal experiences and the ways that traditional beliefs and practices are legitimized and incorporated into the Canadian health care context	Individual interviews. Line-by-line analysis, highlighting key terms and emerging categories. Data were grouped according to major categories; themes were then analytically developed where possible.	Theme regarding health beliefs and practices related to food practices during the perinatal period included "attaining balance through diet". Women were encouraged by family members to eat a healthy diet of fresh fruits, vegetables, and milk but to also include foods that they craved, and many times there was a rationale based on cultural tradition. Certain foods that were believed to have "hot effects" to bring the body into balance - essential for healing and recovery from the birthing process and preventing weakness and illness in later life. Despite the resiliency of traditional beliefs and practices, the women showed flexibility in modifying traditional practices in ways that acknowledged the belief underlying the behavior but could be accommodated within their current family context and the Canadian health care system.
Kulig et al. ³⁸	Southern Alberta, Canada	39 women (13 aged 30–39 yrs, 9 aged 40–49 yrs, 7 aged 20–29 yrs)	Low German-speaking (LGS) Mennonites	Qualitative exploratory descriptive (Sandelowski, 2000)	To generate in-depth information about Low German-speaking Mennonite women's childbearing knowledge and beliefs to develop and implement care that considers and includes their conservative religious beliefs	In-depth open-ended interviews, with summaries taped. Concurrent data analysis and collection; continual reading of transcripts led to category sorting (Glaser, 1978) and constant comparison (Glaser and Strauss, 1967).	Participants adhered to specific dietary measures during pregnancy to ensure a healthy birth outcome; some foods were also ingested to assist with specific symptoms. Avoided foods included milk and eggs (believed to cause nausea), spicy foods (cause of harm to baby), and vitamins (may lead to larger babies). Was thought important to eat craved food (reinforced by families and Mennonite doctors); otherwise, miscarriage or weak baby might result. To "eat well" during pregnancy meant reducing caffeine, increasing fruits and vegetables, and consuming dairy products (particularly milk).
Thornton et al. ³⁷	Southwest Detroit, Michigan, USA	10 dyads with 5 pregnant and 5 postpartum women and 10 people most likely to influence their beliefs and practices (8 husbands, 1 mother, 1 sister-in-law) (age range, 21–36 yrs (mean, 27.1 yrs))	Mexican immigrant Spanish-speaking Latino pregnant and postpartum community residents	Qualitative via community-based participatory research partnership	To investigate the influence of social support on weight, diet, and physical activity-related beliefs and behaviours among pregnant and postpartum Latino women	Semistructured individual interviews Inductive analytical procedure described and followed (Strauss and Corbin, 1990)	The informational and emotional support of husbands was the most important and consistent influence on weight, eating, and physical activity practices. Husbands' concerns and advice about their wives being overweight or "fat" were frequently motivated by a holistic perspective on health whereby physical and mental states were seen as interrelated. The absence of female relatives and mothers to provide advice about food was a prominent theme. Low interaction with experienced women limited their knowledge of ways to cook and eat healthily and increased feelings of isolation. Very old "traditions" (such as avoidance of foods defined as "cold" and indulgence of cravings) were transmitted by both male and female family members.

Table 2. Study Characteristics of Quantitative Studies

Study	Location	Participants	Participants' Ethnicity	Methodology and Study Type
Alevizos et al.4	Piraeus, Greece	497	Arabian	Cross-sectional study with survey and laboratory data
Baer et al.42	North Dakota, USA	Phase 1: 279; phase 2: 2422 Age range, 16–40 yrs (mean, 24 yrs)	Caucasian (65%) and Native American (35%)	Quantitative validation study
Berti et al.46	Canadian Arctic<AU: Ok as revised?>	74 pregnant and 117 lactating women (1,300 nonpregnant and nonlactating women)	Canadian Arctic indigenous communities (Inuit, Metis, First Nations, Dene Nation)	Population-based cross-sectional design using 24-hr recalls
Fitzgerald et al.41	Akwesasne, outside Alaska, USA	111 women (age range, 16–44 yrs (mean, 26 yrs)) living near three hazardous waste sites	Mohawk	Cross-sectional survey study with environmental and blood sampling for PCBs
Gray-Donald et al.43	Northern Quebec, Canada	219 women (107 control, 112 intervention); mean ages, 23.8 and 24.3 yrs	Cree women	Experimental; evaluation of prospective intervention offering regular individual diet counselling, physical activity sessions, and other activities related to nutrition
Lucas et al.45	Nunavik region (14 coastal villages, Hudson Bay and Ungava Bay), southern Quebec, Canada	454 Nunavik newborns and 29 newborns from southern Quebec; mean age, 23.7 yrs (almost 50% between 18 and 24 yrs)	Inuit and southern Quebec Caucasian reference group	Cross-sectional comparative study
Muckle et al.44	Northern Quebec (Nunavut), Canada	135 mothers (mean age, 24.3 yrs)	Inuit	Cross-sectional study
Nochera et al.47	Michigan, USA	67 women (48 pregnant, 19 lactating)	Mixed (Caucasian, African American, Hispanic); 30 USA born, 38 not USA born	Cross-sectional study
Rothenberg et al.40	Los Angeles, CA, USA	311 women (age range, 15–44 yrs)	99% born in Latin America	Comparison of bone and blood lead levels
Watts et al.5	North Dakota, USA	5,862 participants of the North Dakota Special Supplemental Nutrition Program for Women, Infants, and Children	Native Americans and Caucasians	Quantitative descriptive study

Notes: AI, adequate intake; DHA, docosahexaenoic acid; DQI-P, Diet Quality Index for Pregnancy; EPA, eicosapentaenoic acid; FFQ, food frequency questionnaire; GA, gestational age; HUFA, highly unsaturated fatty acid; PCBs, polychlorinated biphenyls; PUFA, polyunsaturated fatty acid.

Research Purpose	Data collection and Analysis	Main Relevant Outcomes
To assess dietary micronutrients in immigrant Arabian pregnant women to investigate possible factors influencing food intake and affecting overall nutritional profile	Food frequency questionnaire (modified according to Arabian culture) to assess height, weight, and nutrition Analysis of blood levels of calcium, magnesium, phosphorus, ferrum, folic acid, and vitamin B12	90% of women planned their diet on their own, 64% bought their own food, and 95% prepared their own food. 98% followed traditional Arabian diet, 10% received medication, and only 14% received nutritional supplements. Iron deficiency was not present for 94.5%. Vitamin A and magnesium intake of these women was slightly higher whereas vitamin D intake was relatively low.
To evaluate the validity of the Harvard Service Food Frequency Questionnaire (FFQ) to assess relative dietary intake among low-income American Indian and Caucasian pregnant women	Harvard Service FFQ questionnaire and 24-hr recall Pearson correlation coefficients were used to compare energy-adjusted intakes estimated from FFQ and diet recalls. Nutrient calculations for 24-hr recalls were performed with Minnesota Nutrient Data System software.	Although data were related to validation statistics, study showed that low-income and minority pregnant women may have poor nutritional status and that the FFQ can provide important information. Nutrients with greatest percentage agreement for the extreme quartiles at 12 and 28 weeks were vitamin B2 and folate (with 54% agreement for the lowest quartile) and dietary fibre (with 53% agreement for the highest quartile).
To assess the diet of indigenous women (including pregnant and lactating women) in the Canadian Arctic in terms of dietary adequacy, and to assess the contribution of traditional food to the diet	Dietary data of adult women (including pregnant and lactating women), collected during five different studies between 1987 and 1999 in Canadian Arctic indigenous communities were combined; 24-hour quantitative dietary recalls were collected. Software for Intake Distribution Assessment partitioned intra- and interindividual variance that allowed estimation of the distribution of usual daily nutrient intakes for comparison with North American dietary reference intakes.	Half of pregnant women and 15% of lactating women reported using a micronutrient supplement (more than other women). Iron intakes were lower than required for pregnant women but higher than required for nonpregnant women. Pregnant women in each population group had higher prevalence of inadequacy of zinc and folate than nonpregnant nonlactating women. Mean calcium intake of most groups was about one-half the AI.
To assess whether exposures to PCBs from other sources (i.e., local meat and produce, residential soil, ambient air, and occupation) are associated with serum PCB levels.	Interviews in second trimester, demographics, pollutants, occupation, FFQ 20-mL blood sample for PCBs Multiple linear regression analysis	Serum levels of total PCBs and three individual congeners were associated with local fish consumption. PCB levels in soil, air, and local foodstuffs other than fish generally were not elevated, except for those obtained close to one of the hazardous waste sites, and no association was found between serum PCB levels and exposure through these media or through occupation.
To improve dietary intake during pregnancy; optimize gestational weight gain, glycemic levels, and birth weight; and avoid unnecessary postpartum weight retention	Baseline questionnaire 24-hr food recalls at 24–30 weeks' gestation and 6 weeks postpartum, evaluated with Food Processor II (v. 5.3) and 1992 Canadian Nutrient Database File Other outcomes via gestational age (ultrasound), rate of weight gain, postpartum weight retention, glucose screening and tolerance tests, and infant birth weight. Intention-to-treat comparative analyses	The intervention did not result in differences in diet measured at 24–30 weeks' gestation, rate of weight gain, or plasma glucose levels. Mean birth weights were similar. The only changes in dietary intake were a reduction in caffeine (pregnancy) and an increase in folate (post partum).
To determine the impact of marine n-3 HUFA (seafood) on GA of Nunavik mothers and the anthropometric characteristics of their newborns while controlling for the effects of environmental contaminants	Hospital records and cord plasma samples for fatty acid profile and mercury and PCB analyses. Comparison between Nunavik and southern Quebec cord samples for fatty acids and environmental contaminants. Parametric statistics to compare mean values. Pearson correlation coefficient to measure intercorrelation between PUFA and to evaluate associations between PUFA and characteristics of mothers and newborns	No evidence that contaminants had negative effects on GA or birth weight. In this seafood-eating population, an increase in the proportion of n-3 HUFA (of total HUFA), measured in umbilical cord plasma phospholipids, was associated with significantly longer GA.
To identify maternal characteristics associated with traditional food consumption and to examine food items associated with PCBs and mercury body burden in pregnant Inuit women from Northern Quebec	Pre- and postnatal interviews for food consumption; measurement of PCB and mercury levels in blood and of mercury in hair Pearson correlations to identify maternal characteristics associated with traditional food consumption as well as traditional food items associated with PCB and mercury body burden	Correlation between blood PCB and mercury concentrations was not observed in this data set. Fish and seal meat consumption was associated with increased mercury concentrations in hair. Despite widespread knowledge of the presence of these contaminants in traditional foods, a large proportion of Inuit women increased their consumption of these foods during pregnancy, primarily because of pregnancy-related changes in food preferences and the belief that these foods are beneficial during pregnancy.
To identify amounts of DHA+EPA and to determine whether any of the measured demographic factors were related to DHA and EPA consumption	Fatty acid FFQ for dietary assessment Comparison between ethnic groups; 1-way analysis of variance and t-tests	DHA+EPA intake was 1.18 g/month across all races and ethnicities. African Americans consumed significantly more DHA+EPA (2.79 g/month), compared with Hispanics (1.64 g) and Caucasians (0.93 g). US natives consumed significantly more DHA+EPA than immigrants (2.45 g vs. 1.55 g).
To examine the contribution of postpartum bone lead concentration to both contemporaneous and third-trimester blood	Blood and bone midtibia (cortical bone) and midcalcaneus (trabecular bone) levels Screening and risk-factor questionnaires for demographic information, lead exposure, and dietary habits Dietary information on consumption of high-calcium foods, oils, and other fats Multiple regression-variance analysis	Postnatal blood lead level was significantly higher than prenatal level ($p < 0.0001$). Bone concentrations reflected varying but elevated past lead exposure. Both calcaneus and tibia lead levels were directly associated with prenatal blood lead, but only calcaneus lead was associated with postnatal blood lead. Increasing natural log years in the USA independently predicted decreasing calcaneus and third-trimester blood lead. Past exposures prior to immigration continue to influence blood levels in this sample.
To assess diet quality of low-income pregnant women and to compare diet quality among Native Americans and Caucasians.	Dietary information was collected for all participants with the Harvard Service FFQ and evaluated based on a modified DQI-P score.	There were minimal differences in diet quality between groups. These women's diets were not meeting dietary recommendations.



On y pense
par Hugo Huchet, 2011

art & humanities

featuring Hugo Huchet

ARTISTE SÉLECTIONNÉ FEATURED ARTIST

Hugo Huchet

Hugo Huchet est né en Bretagne, France.

On dit que tout ce qui est rond attire l'œil de l'enfant. Sans savoir pourquoi, Hugo a toujours été fasciné par La Femme Enceinte. Autodidacte en dessin, peinture et sculpture, le sujet le plus présent dans ses premiers croquis est une femme au ventre rond.

Plus tard, l'idée de devenir sage-femme tombe comme une évidence, mais le parcours qu'il doit suivre pour cela ne lui convient pas. Après le lycée, il intègre un groupe de rock-folk comme percussionniste, en parallèle, il obtient un diplôme de projectionniste en cinéma puis de tailleur de pierre avant de décider de quitter la France pour suivre la formation de sage-femme en Belgique.

C'est à Liège donc que la série « clair-obstétrique » à débuté réellement lors de sa première année d'étude, en 2010. Depuis, le projet s'affine à chaque nouvelle création et avec son expérience professionnelle. Le sujet reste le même, la technique change ou évolue.

L'aplat original prend du volume, de la texture et surtout, de la nuance et de la complexité.

Même si ses études se terminent cette année, il est bien décidé à continuer de faire évoluer ses créations à l'image de son expérience.

Hugo est donc aux prémices de sa carrière de sage-femme ET de son parcours artistique.

Hugo Huchet

Hugo Huchet was born in Brittany, France.

It is said that everything round catches the eye of the child. Without knowing why, Hugo has always been fascinated by pregnant woman. Self-taught in drawing, painting and sculpture, his first sketch was a woman with a round belly.

Later, the idea of becoming a midwife felt like a no brainer, but the course he enrolled in did not suit him. After high school, he joined a group of rock-folk musicians as a percussionist while concurrently obtaining a degree in cinema projection, then training as a stonemason, before deciding to leave France to train as a midwife in Belgium.

It was in the Liège that the series "clair-obstétrique" took shape during his first year of study in 2010. Since then the project has evolved with each new creation and professional experience. The subject remains the same, but the technique changes and evolves.

The original solid colour takes volume, texture and most importantly, the nuance and complexity of the subject.

Although his studies are complete, Huchet is determined to continue to develop his art in the image of his experience.

Hugo is beginning his career as a midwife and his artistic career.



Hugo HUCHET présente sa série « Clair-obstétrique »

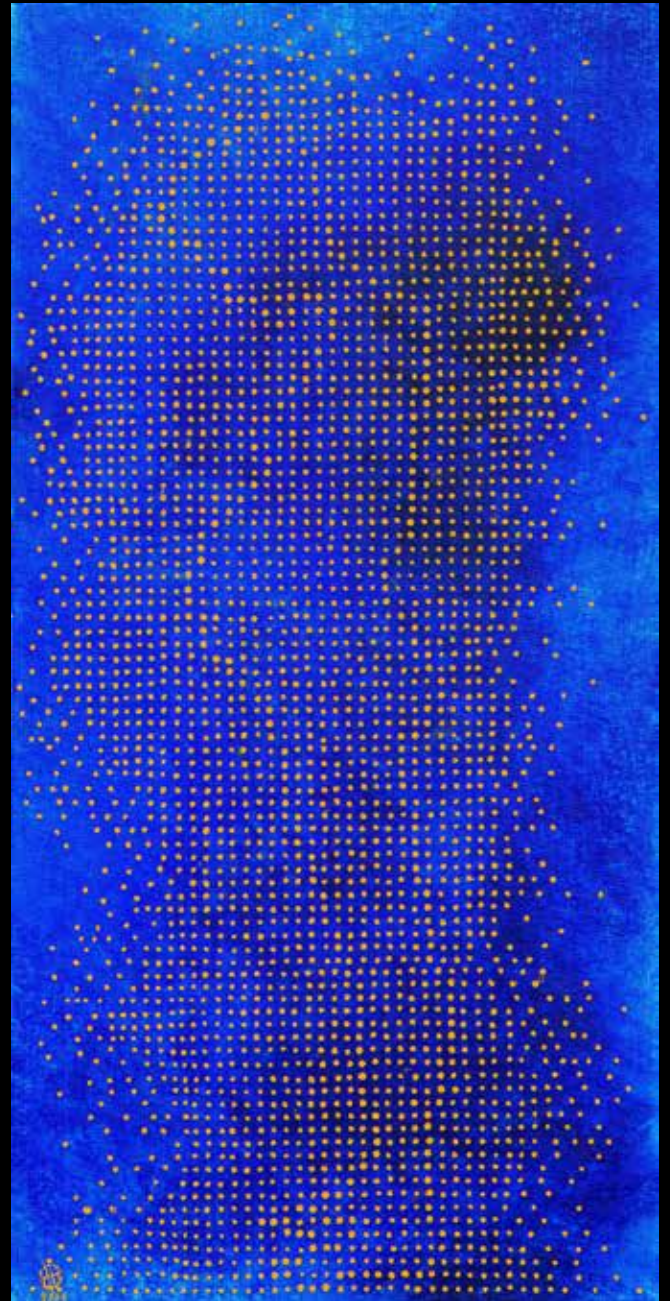
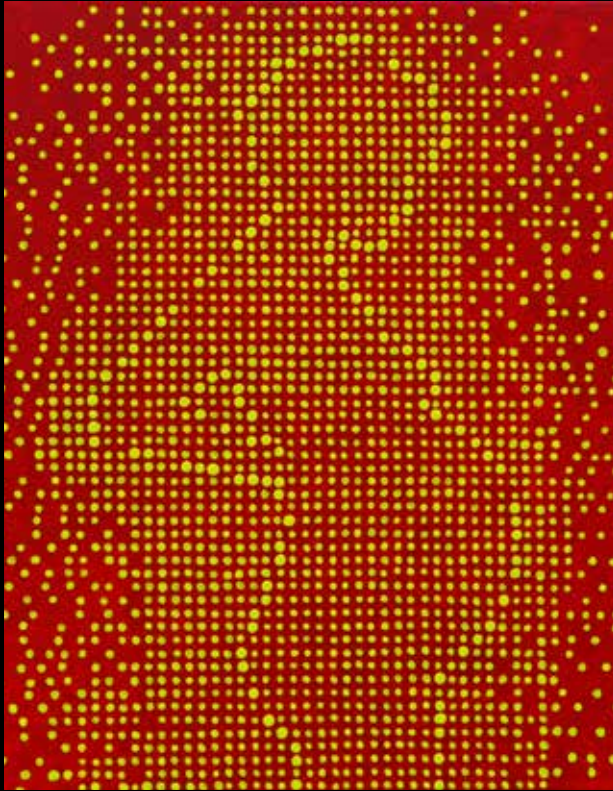


Orangee
par Hugo Huchet, 2013



Douche
par Hugo Huchet, 2011

Points de depart
par Hugo Huchet, 2013



Encore des points
par Hugo Huchet, 2013



Blue Pixel
par Hugo Huchet, 2013

DE L'ART

« Clair-obstétrique »

« L'artiste ne peint en réalité pas des, mais la femme enceinte.

La rondeur, la féminité de ses modèles les rendent identifiables et pourtant, par dessus ces corps-symboles, les visages sont relativement anonymes.

Son travail ne se porte pas sur l'enfant à venir, pas plus que sur la grossesse en elle-même, mais de façon à la fois neutre et extrêmement intimiste, sur le corps, la courbe féminine que la maternité élève à son apogée. Cette dualité entre intimité et neutralité, froideur parfois, est accompagnée de nombreuses autres, car si il a le corps enceint pour fil conducteur, l'artiste a pour mot d'ordre le contraste : contraste entre la spontanéité du trait et la minutie du traitement, entre rondeur et rigueur, jeux de couleurs et clair-obscur.

Bien au delà d'une approche de prime abord purement graphique, on ressent dès la première lecture de ces portraits, qui n'en sont finalement pas, un grand sentiment d'introspection et de réflexion. Certains sont nets, presque durs, d'autres plus tendres, voire éclatés, diffus, déstructurés parfois.

C'est cette palette d'émotions, de représentations des émotions, qui différencie les modèles, ces corps-symboles les uns des autres. L'artiste réalise lui-même ses clichés, mais ceux-ci ne sont destinés qu'à être retravaillés, déstructurés, retailés, dissimulés, etc. La photo n'est donc qu'une étape.

Ainsi, par la diversité des techniques d'applications, et tout en gardant le même sujet, on parle ici de la femme enceinte comme un état, une idée, une impossibilité, un projet, une obsession, un bon ou un mauvais souvenir, ou encore comme un regret, une joie, une actualité, un symbole éternel ... »

HH

ABOUT THE ART

« Clair-obstétrique »

"I do not paint pregnant women, but The Pregnant Woman. Like a symbol.

The roundness, the femininity of the models make them identifiable and yet, over the body-symbol, the faces are relatively anonymous.

The work does not express the unborn child, no more than the pregnancy itself, because both are neutral and extremely intimate, with the body, the feminine curve of maternity at its peak. This duality between privacy and neutrality, perfectly frozen, comes in many forms, as if the pregnant body provides the contrast for the artist. The spontaneity of the body -- between roundness and rigour -- provides great colours, clarity and obscurity.

At first glance of these portraits, they are purely graphic, ultimately not a great sense of introspection and reflection. Some are sharp, almost harsh, others softer or broken, diffused, and sometimes unstructured .

There are a ange of emotions represented, different models and bodies, each different from each other. The artist creates his own shots, but they are intended to be reworked, deconstructed, re-cut, hidden, etc. The photo is only one phase.

Thus, the diversity of techniques applied to each image, while keeping the same subject, we reveal the pregnant woman as a state, an idea, an impossibility, a project, an obsession, a good or bad memory, or even as a regret, joy, news, an eternal symbol ..."

HH

She Is The We

Diane Catherine Otterbine,
 Mother of Aryn, Emily, Sean and Heather
 Birth Daughter of Helen,
 Granddaughter of Jean
 Great granddaughter of Aura
 Diane was a messenger from the Mother With In
 In other tongues they called her the Helper, the servant, the witch
 In these lands she is known as the Doula,
 Not Adoula, not Paula Adula, Just Doula
 The Greek noun, meaning to Mother the Mother.
 So in essence Diane sat, she watched the weaning of the moon
 As she watched the moving of each mothers contraction,
 Diane came when ever she was beaconsed
 at 3 am when she was safely embraced in her husbands arms,
 she was quickly eradicated from all that this earthly life holds dear
 in order to stand at these sacred gates.
 Diane packed her bag heavy with herbs and ointments
 of Shepard's purse, and lilac oil,
 and whispered a prayer in the name of the one who was still not born
 in hopes that she would not tempt fate.
 She rubbed the mothers body in ointment and sung her praise
 for she is no longer Women
 she is the vestibule of Devine
 And her Story now becomes entwined
 This Warrior strengthens her glance
 Stepping onto the threshing floor for her birthing dance
 And in this place mercy is not sweet,
 The travail a mother knows is of the deepest of deep.
 Bearing down, blood rolls to her feet
 An Earth trembling roar is released
 And Men turn their cheeks
 For they can not make her thighs quivers like these

By Grace E. Paterson

The power she harness
 IS of a world unseen
 On her raw heart the words are fond
 Beneath her sweating brow
 She hits her wall
 I can not go on,
 And then the ancient Grandmothers begin to sing
 Mother I feel You Under my Feet
 Mother I hear Your Heart Beat
 Mother I feel You Under my Feet
 Mother I hear Your Heart Beat
 And like magic these words begin to flow..
 Opening her chambers open there is a holy glow ..
 her legs grow deep a thousands years old...
 and in the fierceness she beings to fly
 a life is born... in Her halleluiah cry
 it is in her sweet surrender
 That she is free
 You See she is .. the We..
 And as I scribe these words to you..
 I hear her speak to me of a deeper Truth ...
 In the pain we create
 and travails of life,
 in the loss's of love..
 and misguided strife...
 may we never forget the holy deed..
 the convent of blood, the sacrifice for we ...
 May we face our fears.. and find our roots
 Become the power of the mama and bear our good fruits
 For She... is the We

on Aboriginal pregnant women, and two studied immigrant pregnant women. Those focusing on Aboriginal women were conducted in the United States^{5,40-42} and in Canada.⁴³⁻⁴⁶ The studies on immigrant populations included women of Arabian descent living in Greece⁴ and women of Hispanic, non-Hispanic Caucasian, African American, and mixed ethnicity living in the United States.⁴⁷ The three major themes derived from the included quantitative studies are (1) nutritional status, (2) cultural practices, and (3) seafood consumption and other environmental exposures in the diet.

Nutritional Status and Diet Quality Assessment

Dietary assessment during pregnancy is very important, particularly for populations such as immigrant and Aboriginal women, who are at higher risk of poor birth and maternal health outcomes. This review considers six studies that were conducted to assess the immigrant or Aboriginal participants' quality of diet and the amount of

Traditional beliefs and cultural values favouring healthy food practices may be challenged substantially by social, economic, and political factors.

specific nutrients the participants consumed. The most commonly used assessment tool was a food frequency questionnaire (FFQ).^{4,41,42,47} Gray-Donald et al. used the Canadian Nutrient Database to evaluate the diets of pregnant Cree women in northern Quebec,⁴³ and Watts et al. used the Diet Quality Index for Pregnancy (DQI-P) to compare diet quality among low-income pregnant white and Native American women.⁵ Most of the studies used modified versions of the questionnaire, according to the study's setting and context. One study asked participants to both complete the FFQ and provide blood samples for measurement of their serum levels of calcium, magnesium, phosphorus, iron, folic acid, and vitamin B12.⁴ Another used the questionnaire and serum levels of polychlorinated biphenyls (PCBs) to help determine the exposure risk of pregnant Mohawk women living in coastal regions and near three hazardous waste sites.⁴¹

Watts et al. found that low-income pregnant Caucasian and Native American women participating in a nutrition supplement program in the United States did not meet the dietary recommendations for pregnancy.⁵ All women in this study were consuming too many high-fat foods and less than the recommended amounts of grains and vegetables. Despite access to a program that provided supplements, the poverty experienced by these study participants seemed to be a major contributor to their inadequate nutritional intake during pregnancy. In their study validating a FFQ for use with low-income American native and Caucasian women, Baer et al. showed that low-income pregnant women have poor nutritional status and that the FFQ provided important information about the nutritional status of low-income and minority groups.⁴²

Cultural Practices

As previously mentioned, culture plays a very important role in the diet selection of immigrant and Aboriginal women during pregnancy. Studies of Aboriginal women noted concerns about pregnant women consuming high amounts of fish and seafood, because of the risk of toxic contaminants (such as heavy metals and lead) that could cause fetal brain damage.⁴⁷ However, simply proscribing seafood is problematic when seafood holds high cultural value.

Identifying cultural influences on dietary practices can be useful when assessing the nutritional status of women. Alevizos et al. examined the micronutrient intake of 497 immigrant Arabian pregnant women in Greece and stated that "apart from iron and folic acid supplementation, no further dietary changes were necessary, since their traditional nutritional habits seem to provide all micronutrients in sufficient quantities."⁴ Conversely, studies of Aboriginal women have found multiple influences in regard to the ingestion of harmful nutrients and unhealthy food items; traditional beliefs and cultural values favouring healthy food practices may be challenged substantially by social, economic, and political factors.^{43,45,46}

Seafood Consumption and Other Environmental Exposures in the Diet

Consuming seafood during pregnancy is very beneficial; however, seafood may cause harm if it is contaminated with lead, mercury, or other environmental metals in toxic amounts. Seafood is traditionally consumed in larger quantities in Aboriginal communities that live near the sea.

Three studies explored the consumption of environmental contaminants and dietary nutrients by pregnant Aboriginal women in Canada and the United States. Data for all three studies were collected from women of low socioeconomic background living near a seaport or in a contaminated environment.

A study on the impact of marine n-3 fatty acids and environmental contaminants (PCBs and mercury) on gestational age and the anthropometric characteristics of newborn infants of Nunavik women found no evidence that contaminants had negative effects on gestational age or birth weight. In fact, newborns of the women who consumed high amounts of seafood had increased gestational age.⁴⁵ Muckle et al. examined the association of maternal characteristics, traditional food consumption, and food items associated with PCBs and mercury levels in pregnant Inuit women living in northern Quebec and found that traditional food intake of all kinds of fish during pregnancy was unrelated to PCB body burden. However, fish and seal meat consumption was associated with increased mercury concentrations in the women's hair.⁴⁴ Last, Fitzgerald et al. assessed the adverse effects of dietary, occupational, and residential exposures to PCBs on pregnancy outcomes among pregnant Mohawk women residing near three hazardous waste sites in the Akwesasne community in New York. The results showed that these Mohawk women had, as recommended by advisories, reduced their consumption of fish, which likely contributed to serum levels of PCBs similar to those of other women without similar risks. The PCB levels in local foodstuffs other than fish were not elevated either.⁴¹ These studies indicate that although traditional intake of fish during pregnancy is beneficial and should be encouraged in most situations, pregnant women living in high-risk communities may need to moderate their consumption.

DISCUSSION

Our findings have confirmed the existence of a complex interplay of cultural, social, and economic factors that affect the food choices, food intake, and nutritional adequacy of pregnant immigrant and Aboriginal women. Several of these factors appear to serve as potential barriers to healthy pregnancy and birth outcomes, and the information derived from these findings will be useful for social care professionals, midwives, and other maternity care providers to consider when counselling or providing care to Aboriginal and immigrant women.

For many Aboriginal and immigrant women, attempting to maintain healthy food choices and practices during the perinatal period is difficult and frustrating. Existing barriers include a lack of (1) family and social support (especially for immigrants); (2) access to healthy, affordable, and traditional foods; and (3) knowledge or acceptance of biomedically informed healthy eating practices, especially for the well-being of the baby. Certain cultural aspects may also impart additional challenges that limit behaviour change. Cultural mores, for instance, can conflict with Western concepts of healthy lifestyle practices. Immigrant women, due to the sheer nature of not being immersed in a society that shares their customs, often adhere to certain beliefs and cultural practices more rigidly than friends or family members who have remained in the home country.²¹ As a result, influencing behaviour change in these groups may be particularly difficult, particularly when the changes are perceived to clash with the group's own customs.

Many aspects of culture are interrelated, although some beliefs may be more important in some families and communities than in others. The existence of intracultural diversity should be considered. It is crucial to recognize the heterogeneity in customary dietary practices among both Aboriginal and immigrant groups. Furthermore, individual experiences and beliefs affect behaviours in regard to food, and uniformity in food practices within any cultural group does not exist. Additionally, midwives, nurses, physicians, and dietitians may benefit from discussing lifestyle factors with the pregnant woman's entire family, as it has been shown that interventions that recruit partners and families to participate can overcome family members' traditional resistance to dietary change.⁴⁸ In order to identify feasible ways to achieve lifestyle and nutritional changes, midwives need to gain an understanding of the cultural importance of Aboriginal and immigrant women's diets as well as the complex barriers faced by some communities.⁴⁹

Addressing cultural barriers and cultural strengths as part of behavioural interventions can produce great strides in convincing immigrant and Aboriginal women to alter their lifestyle behaviours. This approach will achieve success if studied and implemented at the community level because researchers and community leaders can assess and work with the cultural norms to which community members strongly adhere. Immigrant and Aboriginal communities have a wide range of cultural beliefs and practices; thus, those who work with individual

communities—researchers, midwives and other maternity care providers, and policy-makers—must consider these cultural practices and build on traditional strengths while addressing customs that may not be ideal for the health of the mother or child. Additional approaches, such as social and financial assistance programs, can help to address the array of health determinants.

CONCLUSION

This review has highlighted the interactions between the cultural beliefs and practices and the behaviour of immigrant and Aboriginal women during pregnancy. Because of the broad range of populations studied, we were unable to make comparisons between specific ethnocultural groups. The review emphasizes the limited amount of data on this topic. To achieve a deeper understanding of ethnocultural food choices and practices, larger studies with Aboriginal and immigrant women are required in order to fully inform processes for improving the cultural competency of maternity care.

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ACKNOWLEDGEMENTS

The authors thank Jennifer Pillay, Research Program Coordinator at the University of Alberta, for editing the manuscript.

This study was funded by the Royal Alexandra Hospital Foundation's Nursing Research Fund, Edmonton, Alberta. Dr. Higginbottom is supported by a Canada Research Chair in Ethnicity and Health.

APPENDICES

1. MEDLINE search strategy for use with the Ovid platform
2. Screening tool