"If they tell me to get it, I'll get it. If they don't….": Immunization decision-making processes of immigrant mothers

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ABSTRACT

OBJECTIVE: To understand information-gathering and decision-making processes of immigrant mothers for scheduled childhood vaccines, vaccination during pregnancy, seasonal flu and pandemic vaccination.

METHODS: We conducted 23 qualitative semi-structured interviews with immigrated mothers from Bhutanese refugee, South Asian and Chinese communities. Participants lived in Edmonton, Alberta and had at least one child under eight years old. Using NVivo™ qualitative software, we generated an inductive coding scheme through content analysis of interview transcripts.

RESULTS: Our three main findings on information gathering and use in vaccination decisions were: 1) participants in all three communities passively received immunization information. Most mothers learned about vaccine practices exclusively from health care practitioners during scheduled visits. Social networks were primary sources of information in origin countries but were lost during immigration to Canada; 2) participants demonstrated universal trust in vaccines (i.e., no anti-vaccination sentiment). They were comfortable in receiving vaccines for themselves and their children, regardless of past adverse reactions; 3) participants' recollection of the H1N1 vaccination campaign was almost nil, demonstrating the lack of reach of public health vaccination campaigns to designated priority groups (pregnant women and children) in Alberta.

CONCLUSION: Our results highlight the limitations of Alberta's current vaccination communication strategies in reaching immigrant women. When immigrant mothers receive vaccination information, our results indicate they will likely follow recommendations. However, our study shows that current communication strategies are not making this information accessible to immigrant women, which limits their ability to make informed vaccination decisions for themselves and their children.

KEY WORDS: Immunization; information seeking behaviour; decision-making; immigrants; child and maternal health

La traduction du résumé se trouve à la fin de l'article.

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Vaccination is a cornerstone of modern public health efforts. Pregnant women, in particular, benefit from seasonal flu, rubella, varicella, tetanus, and other vaccinations because physiologically they are more likely than other populations to suffer severe complications or be hospitalized if they contract vaccine-preventable illnesses.[1] Adult vaccination of women protects newborns from congenital diseases such as rubella or hepatitis B,[2] while childhood vaccination protects children from infectious diseases as their immune systems develop.

Despite the safety and efficacy of vaccination as a health protection measure, uptake rates in Canada do not meet Public Health Agency of Canada national herd immunity targets. Poor childhood vaccination coverage rates exist for diphtheria, pertussis, tetanus, and DTaP-polio-Haemophilus influenza type b (Hib) immunizations, each falling almost 25% short of targets.[3] Child coverage rates for measles, mumps and rubella (MMR) vaccinations are better at 93%, but still do not reach herd immunity targets of 97% for first doses and decrease to 63% for coverage rates of second-dose requirements.[3] Measles vaccination rates are a current concern given recent outbreaks due to low MMR vaccination in geographic or cultural subgroups.[4]

Women and children also have low uptake rates of seasonal and pandemic influenza vaccines, despite being identified as priority groups.[5] Immigrant women and children across Canada, but in western provinces more specifically, had an especially low turnout at H1N1 vaccination clinics during the 2009/2010 H1N1 pandemic.[5] Such events serve as reminders that vaccination is a choice to act, based on an assessment of risk. Effective communication is therefore an essential component of informed decision-making.

Studies have examined immunization rate disparities based on age or regional categories,[6,7] or in vaccine-specific comparisons.[3] These show that adult immunization programs in Canada are not as successful as childhood programs.[6] Yet there is little understanding of immunization trends or the decision-making process of immigrant populations, despite the fact that foreign-born populations represent almost 20% of Canadians (and 23% of Edmontonians).[8] In North America, disease immunity rates for

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women vary depending on origin country[2,7] due to differential experiences of vaccination and disease.

Immunization rate literature for the general population commonly focuses on discrete dimensions of decision-making, such as anti-vaccination sentiments,[9] the role of health care practitioners (HCPs),[10] or systemic barriers to vaccine uptake, such as distance from home to vaccination clinic.[11] Parental health decision-making varies between locally-born and foreign-born communities. For example, as Brunson found, vaccination decision-making in American-born women is based on complex and ongoing processes,[12] which vary depending on the demographic aspects of particular communities. Conversely, women from Asian countries living in the United States shared health protection beliefs based on traditional medicinal methods rather than bio-medical prevention methods such as vaccination.[13] Indeed, women develop their health beliefs in their origin countries.[13]

Given the rising proportion of immigrants in the Canadian population,[14] our research addressed two knowledge gaps of vaccine decision-making. First, how do immigrant women access and use vaccination information to make their vaccination decisions? Second, do decision-making processes vary when making personal versus childhood vaccination choices? These knowledge gaps impede the ability of provincial public health agencies to provide appropriate services for vulnerable immigrant populations. Unlike a recent Canadian study that showed no perceived impediments to access and use of maternal health services and information by educated immigrants,[15] our research focuses on immigrant women of limited education, low English-language competence, and lower socio-economic status. We employed a participatory approach and qualitative methods to understand how immigrant women accessed information and used it to make vaccination decisions for themselves and their children.

METHODS

We designed and conducted this research with a community partner, the Multicultural Health Brokers of Edmonton (MCHB). MCHB's role primarily is to connect immigrant families to perinatal services as the women learn how to access health services in a Canadian context.[16] MCHB, as a health service connector, helps ensure that women attend health appointments, where women may access vaccination and other health information. The focus of this research on vaccination during pregnancy and for young children was identified as important by the MCHB for their operations.

Research participants

MCHB members recruited 23 participants from the South Asian (8) and Chinese (10) communities (the two largest immigrant communities in Edmonton[17]) and from the smaller Bhutanese refugee community (5). Inclusion criteria required participants to: 1) be born in India, Pakistan, China or Bhutan; 2) currently live in Edmonton; 3) have moved to Canada within the last eight years; and 4) have at least one child aged eight years or younger. Eight years of age was chosen to help capture immunization experiences, both in origin countries and in Canada, across immunization events because scheduled immunizations are concentrated in children under the age of eight. Compared to other couple households with children, the household income of our sample had much lower median annual incomes than the city average of $94,653 (Table 1). Furthermore, the education level of this group is low compared to the average woman living in Edmonton, half of whom have completed some form of post-secondary education.[17]

Data collection

We conducted in-person semi-structured interviews, approximately thirty minutes to one hour in duration, between March and September 2013. We co-developed the interview guide with MCHB. The interview guide contained open-ended questions on immigrant immunization experiences in origin countries and in Canada, perspectives with regard to immunization regulations in Canada, and access to and use of health information in vaccination decisions. The questions allowed probing on prior immunization experiences, how the immigration process influenced women's vaccination decision-making in Canada, and how communication strategies could be improved. Participants chose the language of the interview. MCHB members or translators hired through the School of Public Health, University of Alberta conducted foreign-language

Table 1. Demographic characteristics of interview participants

	South Asian		Chinese		Bhutanese refugee		Overall	
Age, years (average)	25–40		24–46		22–44		22–46	
Age, years (range)	25–40		24–46		22–44		22–46	
Number of children (average)	2		1.5		1.75		1.67	
Age of children (average)	2 months – 9 years		9 months – 10 years		9 months – 8 years		2 months – 10 years	
Education level	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Some high school	–	–	7	70	–	–	7	30.4
Completed high school	1	12.5	3	30	1	20	5	21.7
Some post-secondary	6	75.0	–	–	3	60	9	39.1
Completed post-secondary	1	12.5	–	–	1	20	2	8.7
Household income	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
<$10,000	1	12.5	–	–	1	20	2	8.7
$10,000–$24,999	3	37.5	–	–	4	80	7	30.4
$25,000–$49,999	3	37.5	5	50	–	–	8	34.8
$50,000–$74,999	–	–	3	30	–	–	3	13.0
$75,000–$99,999	1	12.5	2	20	–	–	3	13.0

interviews. The Health Panel of the Research Ethics Board at the University of Alberta approved this research.

Data analysis

Using the content analysis method,[18] we analyzed verbatim English-language, and translated foreign-language, transcripts of the recorded interviews. We used NVivo™ 10 qualitative analytic software to organize, manage and analyze the data. We transcribed the English-language interview recordings and a professional transcription service simultaneously translated and transcribed the foreign-language interviews. We inductively coded and analyzed the transcripts using content analysis informed by the constant comparison method.[19] We coded the transcript after each interview, prior to subsequent interviews. By continually comparing transcripts, we explored similarities and differences between interviews, adjusted the interview guide and inductively built the codebook. A second investigator reviewed the two most complex transcripts (9% of interviews) to ensure the codes comprehensively captured key themes. To ensure credibility, we constructed a member-checking exercise that returned summary reports of individual interviews to each participant.[20] We asked the participants to review the summaries to ensure the researchers accurately understood and interpreted participant perspectives. The report offered an opportunity for participants to add/subtract material or to ask additional questions. We integrated comments from the 21% of participants who responded into the final analysis.

To further enhance the credibility of our analysis, we prepared a report of preliminary findings for MCHB, which outlined the main themes that emerged from participant interviews. We met with one MCHB representative from each immigrant community to discuss the report. We recorded and transcribed the meeting for inclusion in the final analysis.

RESULTS

Decision-making factors

Participants universally trusted vaccination and did not express any anti-vaccination sentiments. Participants described trust in three dimensions of their vaccination decision-making processes: vaccine benefits, the Canadian health care system, and recommendations by HCPs.

Vaccine Benefits Despite Adverse Reactions

Most participants trusted vaccine benefits even when they had experiences with adverse vaccination reactions. Over half reported experiencing adverse reactions themselves or witnessing adverse reactions, such as fever, in their children. Some expressed discomfort with these reactions, but they remained steadfast in their commitment to vaccinate their children in the future.

> *"Usually it's for the child and so I think it's okay. But there was once that after the vaccination, he developed a fever and a second time, he had some reaction. The first time was fine and the third time was smooth. Nothing serious and I think he is accustomed to it. He didn't cry or fuss about it. I think it's good."* (Chinese participant)

Most participants had no personal vaccination experiences as an adult. However, a personal experience with adverse reaction caused some to reconsider adult vaccination.

> *"For a baby it is different. When I was young I took vaccinations. But if you ask me now to take one, I would think twice and I might not take it. Sometimes after taking vaccination, it makes me feel very uncomfortable and it hinders me from working or I would fever."* (Chinese participant)

Canadian Health Care

Participants trusted the Canadian government to ensure vaccine safety during development, manufacturing and delivery. They appreciated Canadian health practices and often expressed feelings of gratitude through stories that compared their experiences in Canada to those in their origin country or by explicitly praising Canadian efforts:

> *"If these vaccinations are at the approval of the government and have gone through medical and scientific tests and it's safe, I don't think it's a problem. But if it's in China, I would be worried. Over here, I feel completely secure."* (Chinese participant)
>
> *"The government knows they're good for us so they help us get the vaccines, right?"* (Bhutanese refugee participant)

"Doctors Are God"

The participants repeatedly voiced trust in HCPs and HCPs' health protection recommendations, including vaccination. We use the term HCP because participants did not differentiate between nurses, doctors or other service providers who recommended or distributed a vaccine. No participant expressed distrust in, or scepticism of, HCPs' competence, motivation or intentions when recommending vaccinations:

> *"I think that because your doctor is supposed to be a professional, and they are the ones that suggested it, then it should not affect the baby… and I would get the injection."* (Chinese participant)

In our meeting with MCHB representatives over the preliminary report, we asked if cultural factors, such as paternalistic or more authoritarian societies, explained why women trusted HCPs so strongly. One representative stated, "People in our communities, they fully trust doctors," and two from the South Asian and Bhutanese communities chimed together, "Doctors are God!"

Information gathering and use

The participants were passive in their information gathering. Participants received information almost exclusively from HCPs during visits to health clinics. Indeed, HCPs were most often participants' first and only information sources. Regardless of probing for comments on many information source possibilities, participants almost never remembered engaging with any information source other than HCPs.

The participants did not actively set their own health care appointments. When women in our study became pregnant, MCHB made their prenatal care appointments. Likewise, after childbirth, hospitals organized infant checkups. Visits were

organized by MCHB or by hospitals, after childbirth, based on clinic proximity to the mothers' homes, not on whether the clinic had available HCPs who spoke the origin languages of the mothers. Visited medical professionals were obstetricians, gynaecologists, paediatricians, and general practitioners or nurse practitioners at walk-in clinics.

Only a couple of participants reported that HCPs had asked about or recommended immunizations during their pregnancies, in the hospital, or after childbirth. Other mothers became concerned when asked if a HCP had offered immunizations during pregnancy, because we were the first to discuss adult immunization with them. Immunization programs in their origin countries were child-focused as well,[21,22] thus our questions about adult immunization often surprised or confused the participants.

More generally, participants recognized their dependence on HCPs for information and differentiated between visits as to quality and volume of the information they received.

> *"I just walked into the medi-centre and did not have much interaction with any doctor so I'm not really sure. Maybe if I had a family doctor they would have suggested vaccines."* (South Asian participant)

Women from all communities described information gathering as being easier in their origin countries than in Canada. Participants cited language of information, both spoken and written, as barriers to mothers' access and understanding of vaccine information in Canada. Chinese and Bhutanese participants cited the role of government or HCP in directly delivering information on health behaviour expectations to families in their origin countries. Moving to Canada caused women to lose their social supports in obtaining health promotion information. For South Asian women, their familial networks, especially mothers in law, were their primary source for health information and advice.

> *"…in Pakistan, there are mothers, mother-in-laws. They know all these things…my mother-in-law would go with us…But here we have to take extra steps ourselves."* (South Asian participant)

Only two participants remembered receiving information on, or the vaccination against, H1N1 influenza virus during the 2009/2010 H1N1 pandemic. No participant could comment on the media, vaccination clinics, or conversations with friends, family or HCPs about H1N1 during the pandemic. We asked about experiences during H1N1 using terms such as H1N1, Swine Flu, and pandemic flu, but none of these efforts inspired memories of H1N1 information gathering or vaccination. None of the participants remembered enough of the event to share perspectives or opinions about the rollout of pandemic vaccination by health authorities in Edmonton.

Final decision-making

Participants very frequently followed HCP-recommended illness prevention and treatment strategies. They almost never questioned, let alone decided against, HCP-recommended health protection behaviours. Most women solely relied on HCP recommendations and did not consider any other factors in their final decisions to vaccinate their children.

> Interviewer: *"So how did you and your husband make the decision of which vaccines you would get?"*
> South Asian participant: *"It was nothing like that. On our first visit, we had gone to the nurse and she told us that if we are staying close to the baby, this is the list of vaccines we give…She asked me a few questions. It also depended on which origin you were from…I think that's how **she** did it, how **she** decided which vaccines."* (emphasis added)

Another participant indicated:

> *"Three months into my pregnancy, my doctor asked me to take the flu vaccination but this time, when I'm pregnant again, my doctor did not ask me to take it so I'm a little confused. If I have the recommendation from a doctor, I would take it and if there is none, I won't."* (Chinese participant)

The mothers often considered additional information gathering, outside of HCP recommendations, unnecessary. When asked if they did further research after receiving recommendations, mothers made statements such as:

> *"No. No. No. If they say go, then I'll just go… Canada places a high importance toward children and won't cause any harm toward them. So because of that and they have already done research to see what is good for the children, then I'll just go with them."* (Chinese participant)

All but one participant indicated that their husbands had no interest/role in immunization decisions. The mothers made independent immunization decisions for themselves and their children. This may be a product of strong trust in HCPs by the whole family, which, in turn, minimizes familial discussion about the decision.

DISCUSSION

Our results suggest homogeneity in the information-gathering and decision-making processes of immigrant women in South Asian, Chinese, and Bhutanese refugee communities regardless of how long they had lived in Canada. The majority of participants demonstrated trust in health authorities and an absence of information-seeking behaviour beyond HCPs. Our participants used a narrower set of factors in vaccine decision-making than indicated for American-born parents by Brunson,[12] whose study also included impacts of general social norms, norms of specific social networks, social networks as information sources, written information sources, and various levels of critical assessment of information.

Information gathering

North American-born women often engage multiple sources of information, such as partners, family members and the Internet, to inform their vaccination decisions.[12] The immigrant women in our research did not search for additional vaccination information from sources other than their HCPs. Evidence suggests that North American-born women make decisions on both general and emergency vaccination, such as H1N1 pandemic

influenza immunization, partially based on active information gathering from several sources, and reassess decisions on a vaccine-to-vaccine basis.[12] Our participants from three immigrant communities did not engage in such active and complex information-gathering processes. Comparatively, they were passive in both vaccine information gathering and decision-making, highlighting the importance of HCPs in promoting the uptake of immunization for immigrant families in Canada. This is consistent with other studies; immigrant communities often demonstrate a preference for health information from HCPs over the Internet[23,24] or social networks.[15]

Decision-making

Many factors have been shown to impact vaccine uptake; social norms and networks often play a central role in vaccine information gathering and uptake decisions.[25] Like Brunson,[12] our research found acceptance of social norms, such as trust in HCPs or pro-vaccination sentiment, could create a minimalist decision-making process. Our participants accepted recommendations with little or no questioning and, in turn, did not investigate other vaccination options or information. Rather, they made decisions based on the 'right' recommendations made by their HCPs. Counter to literature on women's vaccination decision-making in other countries,[26] husbands of our participants did not play a role in immunization decision-making, strengthening the importance of HCP recommendations.

Immigrant considerations in our study are similar to those of wider populations in that trust in HCPs and vaccine safety are central to decision-making.[10] Our participants, however, demonstrated a high degree of respect for medical authority, likely a reflection of cultures in origin countries that do not encourage patients to question their doctors.[27]

Access to information

Our results suggest that mothers in the three participant communities will likely follow immunization recommendations received from HCPs during visits to health clinics. The mothers were connected to HCPs through existing relationships with MCHB. While our study could not make causal inferences on preferred source (i.e., was the preference cultural or due to socio-economic constraints), it did highlight the importance of services that connect immigrant women with health services, such as MCHB. Members of MCHB acted as both facilitators and direct information sources for vaccination information. Our results bely the current governmental and health agency trend towards Internet sources for health information, which may not be accessible to immigrant women for cultural or socio-economic reasons.[24] Furthermore, health care or settlement agencies, such as MCHB, can serve as important sources of information only if newcomers are introduced to such agencies and services.[23]

Finally, our study points to problems with recent changes in Canada's policy on refugee health care. Interviews with Bhutanese refugees in this research took place in March 2012, immediately prior to the Government of Canada's restrictions on funding and access for refugees to health care services.[28] The new policy did not affect access to immunization, likely because of the society-wide benefits. However, pregnant refugees must now pay up front for basic prenatal screening and care, and refugee children are no longer eligible for checkups.[29] Our research implies that limiting access to prenatal and child health services will reduce access for refugee women to vaccination information, in turn reducing likelihood of participation in immunization programs for themselves and their children. This will have implications for preventable disease control for all Canadians.

Limitations

We did not include a group of socio-economically matched Canadian-born women as a comparison. Some studies suggest socio-economic context may hold more weight in predicting health decision-making processes than do ethnic origins.[30] In addition, our study was conducted in a single urban centre, Edmonton. Nevertheless, our results make a novel contribution to the literature by illustrating how immigrant women make vaccination decisions for themselves and their children. Finally, our research did not clarify what proportions of immigrant families connect with HCPs or how these connections take place. To optimize the knowledge created by our research, an understanding of how best to connect immigrant families to health care services would be crucial.

CONCLUSION

Immigrant women in Canada trust HCPs, health care agencies, and vaccines; they do not share the vaccine safety concerns sometimes expressed by their North America-born counterparts.[9,11] Our participants accessed vaccine information almost exclusively from HCPs. These findings are encouraging because they suggest that improving information delivery from trusted HCPs may increase participation in immunization programs by women and their children from South Asian, Chinese, and Bhutanese refugee communities. Agencies that connect new immigrants to health services have an essential role to play in communication about vaccination. In Alberta, Primary Care Networks (PCNs) also present opportunities for vaccination provision in adult, influenza, pandemic, and childhood contexts. PCNs are localized, interdisciplinary health collaborations organized to find family physicians for Albertan residents and to make health promotion and protection services, including immunization services, accessible to Albertan communities.[31]

Vaccination communications strategies should therefore focus on the central role of HCPs and supportive agencies. Communications strategies will need to engage HCPs and the communities they serve in developing creative, informal and language-appropriate information delivery methods and materials.[24] However, to reach the most vulnerable women with limited access to health services, health clinics and agencies that deliver immigrant and refugee services will also need to be engaged as potential information sources so that women can make informed vaccination decisions for themselves and their children.

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RÉSUMÉ

OBJECTIF : Comprendre les processus de collecte d'information et de prise de décision des mères immigrantes pour la vaccination prévue, la vaccination pendant la grossesse, la grippe saisonnière et la vaccination en période de pandémie.

MÉTHODES : Nous avons effectué 23 entrevues qualitatives semi-structurées avec des mères immigrées des communautés de réfugiés bhoutanais, d'Asie du Sud et chinois. Les participantes vivaient à Edmonton, Alberta, et avaient au moins un enfant de moins de huit ans. Grâce au logiciel qualitatif NVivo™, nous avons généré un schéma de codage inductif au moyen de l'analyse du contenu de la transcription des entrevues.

RÉSULTATS : Nos trois principales constatations sur la cueillette et le recours à l'information dans les décisions sur la vaccination étaient : 1) les participantes des trois collectivités recevaient passivement l'information sur l'immunisation. La plupart des mères obtenaient de l'information sur les pratiques de vaccination exclusivement des professionnels de la santé pendant les visites prévues. Les réseaux sociaux étaient la principale source d'information dans le pays d'origine, mais étaient perdus pendant l'immigration au Canada; 2) les participantes avaient une confiance universelle dans les vaccins (c.-à-d. aucun sentiment antivaccin). Elles se sentaient à l'aise de recevoir des vaccins pour elles-mêmes et leurs enfants, quelles qu'aient été les réactions adverses passées; 3) le souvenir qu'avaient les participantes de la campagne de vaccination H1N1 était presque nul, ce qui illustre l'absence de portée des campagnes de vaccination de la santé publique pour les groupes prioritaires désignés (femmes enceintes et enfants) en Alberta.

CONCLUSION : Nos résultats soulignent le peu d'efficacité des stratégies de communication albertaines actuelles en matière de vaccination à atteindre les femmes immigrantes. Nos résultats indiquent que les mères immigrantes suivront probablement les recommandations lorsqu'elles reçoivent de l'information sur la vaccination. Mais notre étude montre que les stratégies de communication actuelles ne fournissent pas cette information aux femmes immigrantes, ce qui limite leur capacité de prendre des décisions éclairées sur la vaccination pour elles-mêmes et leurs enfants.

MOTS CLÉS : immunisation; comportement de recherche d'information; prise de décision; immigrants; santé de l'enfant et de la mère