

Determinants of parental vaccine hesitancy

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Abstract

Question We engage parents on a daily basis in the office to discuss immunization for their children, and some of them are hesitant about vaccination. Discussing the importance of vaccines for the child and the public, and reviewing the safety of vaccines has not led to substantial increases in acceptance in our office. What factors influence a parent's views of vaccines, and how can we effectively address them in practice?

Answer Despite medical acceptance of vaccines and widespread accessibility, many Canadian children do not receive all their vaccines, and parental hesitancy has increased in the past 30 years. Thus, family physicians play an important role in addressing concerns that parents might have about vaccines and in increasing vaccine uptake. Determinants of vaccine hesitancy are heterogeneous and multifactorial. Factors that affect vaccine decision making include the perceived risks of vaccines, the relationship between parents and health care providers, and the social norm of vaccination. Communication strategies such as motivational interviewing and using presumptive language are valuable tools to increase vaccine uptake in children with vaccine-hesitant parents.

Les déterminants de l'hésitation vaccinale des parents

Résumé

Question À la clinique, nous discutons au quotidien avec des parents de l'immunisation de leurs enfants, et certains sont réticents à la vaccination. La discussion concernant l'importance des vaccins pour l'enfant et la population, et l'explication de l'innocuité des vaccins n'ont pas entraîné une augmentation considérable de l'acceptation dans notre clinique. Quels sont les facteurs qui influencent l'opinion des parents concernant les vaccins, et comment pouvons-nous les aborder efficacement dans la pratique?

Réponse En dépit de l'acceptation médicale des vaccins et de leur accessibilité généralisée, de nombreux enfants canadiens ne reçoivent pas tous leurs vaccins, et l'hésitation parentale s'est accrue au cours des 30 dernières années. Par conséquent, les médecins de famille jouent un rôle important pour répondre aux préoccupations que pourraient avoir des parents au sujet des vaccins et augmenter l'adhésion à la vaccination. Les déterminants de l'hésitation vaccinale sont hétérogènes et multifactoriels. Parmi les facteurs qui influencent les décisions au sujet des vaccins figurent les risques perçus des vaccins, la relation entre les parents et les professionnels de la santé, et la norme sociale de la vaccination. Des stratégies de communication comme les entrevues motivationnelles et le recours à un langage présomptif sont des outils précieux pour augmenter la couverture vaccinale chez les enfants dont les parents sont réticents face aux vaccins.

The advent of vaccines is one of the most important public health accomplishments in history, preventing an estimated 2 to 3 million deaths annually worldwide.¹ Despite medical acceptance of vaccines and widespread accessibility in Canada, the Childhood National Immunization Coverage Survey reported that, in 2017, as many as a quarter of 2-year-old Canadians had not received all of their recommended vaccines.²

The concept of *vaccine hesitancy*, defined by the World Health Organization as “delay in acceptance or refusal of vaccines despite availability of vaccine services,”³ is used to describe the continuum of concerns regarding vaccine acceptance—ranging from worries about vaccine safety to antivaccination sentiment.⁴ While only 2.35% (95% CI 1.76% to 2.93%) of Canadians refused all vaccines

for their children in 2017,² overall vaccine hesitancy has increased over the years.⁵ Half (52%) of Canadian parents are concerned about potential adverse effects of vaccines, and 13% of parents believe that alternative practices can replace the need for vaccines.² In a Canadian Immunization Research Network survey report aimed at assessing parental factors associated with vaccine hesitancy, 68% of parents across Canada with children aged 24 to 59 months stated that they frequently had to look or ask for information about vaccines (N=2013; survey population was benchmarked to the Canadian census to ensure a representative population).⁶

Primary care providers assume the imperative task of addressing vaccine hesitancy. Family physicians and primary care pediatricians (21% and 46%, respectively)

reported reduced satisfaction in their jobs because of parental vaccine concerns, and most of them reported spending between 10 and 19 minutes discussing vaccines with parents.⁷ Thus, effective and efficient communication strategies that convey accurate information are critical to increasing vaccine uptake. In 2019, Shen and Dubey wrote on how Canadian family physicians can address vaccine hesitancy in parents, and here we build upon their review by examining the determinants of vaccine hesitancy and provide an update on the literature on approaches to vaccine-hesitant parents.⁸

Determinants of vaccine hesitancy

More than 70 independent barriers are associated with vaccine hesitancy.⁹ These include psychological barriers (such as perceived risk, usefulness, and social benefit), contextual barriers (such as access to health care services), and lifestyle (such as smoking, drinking, and physical activity).⁹ An in-depth qualitative review from 2018 by Dubé and colleagues suggested that trust in health care providers' advice and mainstream medicine, the influence of social networks and social norms, knowledge sources about vaccines, and general views toward health are key factors in parental vaccine decision making.¹⁰

The complexity of vaccine hesitancy highlights the need for individualized strategies to address parental reluctance to vaccinate their children. Recommendations from the Canadian Vaccination Evidence Resource and Exchange Centre and the Canadian Paediatric Society include the use of evidence-based communication strategies to proactively address attitudes toward risk, trust, and social norms of vaccines.^{11,12}

Risk perception

Parents' perception of vaccine risk is often complicated by cognitive bias and personal experience, making it one of the most commonly cited determinants of vaccine hesitancy.¹³ Yet, risk of severe complications from contracting measles, for example, is more than 1000 times greater than the chance of a child experiencing a severe adverse event related to the measles, mumps, and rubella (MMR) vaccine (administered at 12 months of age in Canada).¹⁴

A study of omission bias in parents in the United Kingdom found that when considering H1N1 influenza vaccination for their children, parents rated symptoms of vaccination adverse events less favourably than the exact same symptoms caused by the disease ($P < .01$ for 17 of 22 symptoms; $N = 99$).¹⁵ As substitute decision makers for health-related decisions, parents put more value on and perceived greater risks associated with taking action, such as a child having a severe reaction to a vaccine, compared with the risk of an omitted action, like the chance of contracting a disease.¹⁶

A 2020 survey from Pennsylvania State University of 141 parents who changed their decision on influenza immunization from one year to the next reported

that parents who decided to initiate influenza vaccines made choices to protect their children because they understood the risk of disease (45%; $n = 64$). Those who stopped yearly influenza vaccinations for their children most commonly cited a perceived lack of effectiveness of the vaccine (29%; $n = 41$).¹⁷

These biases lead to non-objective decision making, so vaccine-uptake strategies that focus solely on providing facts to parents are unsuccessful.¹³ A 2018 Cochrane review of face-to-face educational programs about vaccine safety found they were ineffective at changing parental attitudes about vaccines.¹⁸ A randomized controlled trial of parents with children younger than 17 years of age evaluated 4 different fact-based interventions for their effect on intention to vaccinate against MMR (a pamphlet correcting misinformation about a correlation between MMR and autism; facts about the risks of MMR diseases; a narrative description of a child with measles; and images of children with MMR diseases). The authors reported that none of the interventions increased the likelihood of parents vaccinating. Furthermore, providing parents with the autism correction intervention, which presented corrective scientific information on the myth that vaccines are linked to autism, resulted in a *reduced* likelihood of parents vaccinating future children (adjusted odds ratio [AOR] of 0.52; 95% CI 0.32 to 0.84; $P < .05$; $N = 1571$).¹⁹

Trust in health care providers

Trust in health care providers is an important determinant of vaccine hesitancy.¹⁰ A 2011 study found that trusting that doctors do "what is in the best interest of the public" was associated with parental intention to vaccinate their children (AOR = 1.9; 95% CI 1.3 to 3.0; $P < .001$ —adjusted to the theory of planned behaviour, a psychological model shown to predict health behaviour).⁷ In a 2017 survey of parents with children younger than 7 years of age, health care provider advice was the most common reason vaccine-hesitant parents changed their minds about obtaining recommended vaccines for their children (41.5%; 95% CI 35.4% to 47.9%; $n = 465$).²⁰ Thus, fostering a trusting relationship with parents is an important aspect of effective vaccine communication.


Motivational interviewing—an empathetic, guiding questioning that elicits the parent's own motivation to change—provides a framework for discussion and increases patient-provider trust²¹ and the efficiency of physician communication,²² while decreasing negative attitudes and perception of vaccine risk.²³ Reflective listening highlights discrepancies between goals and behaviour (a parent wanting to protect the child juxtaposed with a delay in vaccinating the child), conveys compassion, and can help adjust personal bias.²² It provides a framework for discussion and increases the efficacy of physician communication in a timely manner as well as patient-provider trust.^{23,24} In maternity wards in Quebec,

mothers' intention to vaccinate their children increased by 12% (90% postintervention compared with 78% preintervention; $P < .001$) after health care providers employed a motivational interviewing technique with the mothers.²³

Increasing the social norm

It is important for physicians to normalize childhood vaccination, because many vaccine-hesitant parents do not think that childhood vaccination "is the normal thing to do."²⁴ Participatory language ("What would you like to do about vaccines today?") resulted in a modest decrease in the odds of vaccine acceptance compared with a presumptive approach ("We are going to have to do some shots today") (AOR=0.04; 95% CI 0.01 to 0.15—adjusted for parent and child characteristics).²⁵ Combining presumptive-language and motivational interviewing at 8 primary care clinics in Colorado reduced vaccine hesitancy and increased the odds by 46% of adolescents initiating human papillomavirus vaccinations (AOR=1.46; 95% CI 1.31 to 1.62).²⁶ These communication tools, when used in a tailored and empathetic way, might increase vaccine uptake among children with vaccine-hesitant parents.

Conclusion

Vaccine hesitancy has been on the rise in Canada, so physicians must garner tools to successfully engage parents who are unsure about following the recommended vaccine schedule. To improve vaccine uptake in Canadian children, an ongoing individualized approach is important for addressing vaccine hesitancy, and using presumptive language and motivational interviewing techniques are promising strategies. 

Competing interests

None declared

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