

Exploring the Reasons Behind Parental Refusal of Vaccines

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Parental refusal of vaccines is a growing concern for the increased occurrence of vaccine preventable diseases in children. A number of studies have looked into the reasons that parents refuse, delay, or are hesitant to vaccinate their child(ren). These reasons vary widely between parents, but they can be encompassed in 4 overarching categories. The 4 categories are religious reasons, personal beliefs or philosophical reasons, safety concerns, and a desire for more information from healthcare providers. Parental concerns about vaccines in each category lead to a wide spectrum of decisions varying from parents completely refusing all vaccinations to only delaying vaccinations so that they are more spread out. A large subset of parents admits to having concerns and questions about childhood vaccinations. For this reason, it can be helpful for pharmacists and other healthcare providers to understand the cited reasons for hesitancy so they are better prepared to educate their patients' families. Education is a key player in equipping parents with the necessary information so that they can make responsible immunization decisions for their children.

INDEX TERMS: parental refusal, personal beliefs, religious, safety concerns, vaccine hesitancy

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INTRODUCTION

“Vaccine hesitancy” is a relatively new term used in research over the past few years to describe anyone who is doubtful about vaccinations or who chooses to delay or refuse immunizations even when they are readily available.^{1,2} Vaccines play a vital role in preventing diseases in children, so it is crucial that pharmacists and other healthcare professionals understand the reasons that parents are hesitant or refuse to vaccinate their children. Although there are no federal laws regarding vaccine administration, each state has laws in place dictating which vaccinations are required for children prior to entering schools.³ All 50 states allow medical exemptions for certain patients, such as those who are immune compromised or allergic to various vaccine components. Additionally, there are 30 states that allow exemptions for children whose parents cite religious reasons and 18 states that make special accommodations for those expressing philosophical reasons.³ States that have more lenient laws on vaccination requirements also have an increased rate of exemptions granted; this can

lead to greater vulnerability in the population in terms of contracting preventable diseases.⁴

There have been a number of studies examining the reasons why parents refuse, delay, or are hesitant to vaccinate their children (Table). In one such study,⁵ 77% of parents polled reported having concerns about one or more childhood vaccinations. Reasons expressed by parents vary widely but can be classified into 4 overarching categories. These categories are religious reasons, personal beliefs or philosophical reasons, safety concerns, and a desire for more information from healthcare providers. The purpose of this article is to equip pharmacists and other healthcare providers with an understanding of the most heavily cited reasons that influence parents not to vaccinate their children. This will better enable healthcare personnel to provide the education and awareness that patients' families need to make responsible immunization choices.

REASONS FOR VACCINE HESITANCY

Within each of the categories described above parents present a spectrum of compliance with

Table. Review of Selected Literature

Reference	Population	Methods	Primary Findings
Dubé et al ²	Immunization managers (IMs) from 13 different countries	Telephone-based interviews	13 IMs identified religion, cultural, sex, and socioeconomic reasons for vaccine hesitancy; 7 IMs identified parenteral concerns for vaccine safety, lack of belief in vaccine benefit, and lack of understanding the problem of vaccine-preventable diseases as reason for hesitancy; 3 IMs identified the risk of adverse effects as reason for hesitancy
Kennedy et al ⁵	367 respondents reported having kids ≤6 yr old	Used results from the 2010 HealthStyles survey, which looked into parents' attitudes about vaccines and their concerns	38% reported thinking that kids get too many shots during one doctor's office visit; 32% reported concerns about fevers; 30% reported concerns about vaccines causing learning disabilities; 11% reported they did not think their children would get the vaccine-preventable disease; 23% reported no concerns about vaccines
Imdad et al ⁶	Public schools in New York State	Used results from school-based immunization surveys from the New York State Department of Health (NYSDOH); calculated exemption rates were separated into counties, and changes in exemption rates were calculated from the difference in 2011 compared to 2000; Pertussis cases for children <19 yr old were obtained, and the incidence of pertussis was evaluated in each county	The prevalence of religious exemption increased from an average of 0.23% in 2000 to 0.45% in 2011; counties with ≥1% exemption rate had higher incidence of pertussis (33.1 per 100,000) than counties with a lower exemption rate (20.1 per 100,000); county incidence of pertussis was higher in the exempted children (6 to 1000 per 100,000) than in vaccinated children (5 to 98 per 100,000). The average incidence of pertussis in exempted children was 14 times higher than the incidence in vaccinated children (302 per 100,000 and 22 per 100,000, respectively)
Wombwell et al ⁷	Not applicable	A comprehensive literature search for studies specifically looking at religious objections to the measles, mumps, rubella (MMR) vaccine	The most common reason cited for religious objections with the MMR vaccine is the use of aborted fetus tissue and animal-derived gelatins used in the production of vaccines
Frederickson et al ⁸	Family physicians, pediatricians, nurses, and parents from 6 different cities	32 focus groups (5-10 people each) comprising healthcare providers or parents were used to determine parenteral concerns about vaccinations	Found parents were usually open to discussions with a provider about vaccines if they were unsure about vaccinating and eventually were agreeable to vaccinations. Found the varicella vaccine to be the most commonly refused immunization. The most common reason for refusal of vaccines was fear of side effects heard about from word of mouth or media

Table. Review of Selected Literature (*cont.*)

Reference	Population	Methods	Primary Findings
Saada et al ⁹	Parents of 12- to 36-months who were members of Kaiser Permanente in Northern California	Semistructured individual telephone interviews with parents asking about vaccination experiences, schedules, and preferences	Identified 5 alternative vaccination approaches and found parents expressed a desire for greater control of vaccine ingredient exposure. Parents also expressed concerns about vaccine safety, immune system burden, and perceived disease risk
Harmsen et al ¹⁰	Parents of children aged 0-4 yr (partially vaccinated children and not vaccinated children) in The Netherlands	Online focus group discussions regarding decisions on vaccination status and perceptions on new vaccines	Most of the parents cited not enough information about immunizations as the reason for which they refused vaccines
Kennedy et al ¹²	475 respondents to the 2009 HealthStyles survey with at least 1 child <6 yr were included in the analysis	HealthStyles consumer mail panel survey asking questions regarding vaccine-related attitudes, concerns, and information sources	Found that 93.4% reported their youngest child received or would receive vaccines. Also found that the majority of parents believed vaccines were important to health and were confident in their safety
Gust et al ¹⁴	Parents with at least one child <6 yr old who responded to the 2003 HealthStyles survey	HealthStyles consumer mail panel survey asking more in-depth questions about specific health issues	Most parents agreed to having access to vaccine information, yet one-third did not. Those who felt they lacked information had negative attitudes about immunizations and toward healthcare providers
Williams et al ¹⁵	132 families scoring >25 on the Parent Attitudes about Childhood Vaccines (PACV) survey at 2 primary care sites	Provided families who scored >25 on the PACV survey with usual care or video and information about vaccines to parents hesitant about immunizations. PACV scores were compared for enrollment and 2 mo	Those in the intervention group demonstrated a significant decrease in PACV score at 2 mo when compared to the control group. No difference between rates of on-time immunizations was found between the 2 groups at 12 wk

vaccination, including delaying vaccinations, only refusing certain ones, or refusing immunizations completely. Religious reasons tend to account for the majority of total vaccine refusal, while parents with personal beliefs against immunization tend to be more willing to compromise and at least partially vaccinate their children. Parents are concerned with doing the best for their children, and hearing reports of potential safety issues or that childhood diseases are not a large threat can hinder them from vaccinating their children.

Religious Reasons

One of the most common reasons parents offer for choosing not to vaccinate their children stems from their religious beliefs. With only 4 states not

offering exemptions to families for this reason, it poses a major obstacle to those seeking to increase childhood vaccination rates.³ Religious reasons are distinct from other cited reasons in that they are generally linked to the core beliefs of the parents, and it is very difficult to dissuade these individuals from views against immunization. These choices are not the by-product of ignorance but rather the intentional and calculated decision related to a staunch conviction. In addition, in contrast to other cited reasons for hesitancy, those driven by religious assertions most often are linked to a complete refusal of all vaccines.²

Imdad et al⁶ conducted a study in New York State and found that the rate of school vaccination exemptions due to religious reasons between 2000 and 2011 increased sharply. In response to

this reality, lawmakers put in place guidelines that introduced requirements that mandated that in order for schools to grant religious exemptions, the parents had to demonstrate their “genuine and sincere religious belief” that contradicted the use of vaccinations.⁶ These burdens of proof are likely to become more popular as an increasing number of parents attempt to use the nebulous loophole of religious freedom to bypass the societal necessity of combating preventable diseases through immunizations. The authors⁶ further discovered that the counties that had higher exemption rates, $\geq 1\%$, also had an increase in reported pertussis cases, 33 per 100,000 compared to 20 per 100,000 in counties with lower exemption rates.

Wombwell et al⁷ evaluated different religions and the reasons that vaccines may violate their religious tenets. The explanation most commonly offered for why specific vaccinations oppose religious tenets involves components of the vaccines.⁷ The animal-derived gelatin used in producing some vaccines as well as the human fetus tissue used in the rubella component pose the largest concerns.⁷ By understanding the objections that large portions of the population hold, monies may be strategically targeted for research that can address these concerns and render vaccinations more acceptable for these groups.

Personal Beliefs or Philosophical Reasons

Another common reason that parents give for refusing or delaying vaccinating their children is personal or philosophical reasons. Although only a handful of states allow exemptions for this cause, it must be carefully studied, as it may present opportunities for practitioners to enlighten parents regarding the urgency of protecting the children through preventive measures. Though it seems contrary to human intuition, there is a group of people who see some benefit in having their children contract certain preventable diseases.⁸ Some parents believe that natural immunity is better for their children than is immunity acquired through vaccinations.⁸ Others express the belief that if their child contracts a preventable disease, it will be beneficial for the child in the long term, as it will help make the child's immune system stronger as he grows into adulthood.⁸⁻¹⁰ Some parents believe that the diseases for which we vaccinate are not very prevalent so their children are at minimal risk of contracting these diseases. For this reason, they

also believe that the possible negative side effects of vaccine administration outweigh the benefits of the vaccines.⁹ Many parents do not see the preventable diseases as serious or life-threatening and would prefer to not put extra chemicals into their children's bodies.^{8,9} Other parents think if their children have healthy diets and lifestyles they are at a decreased risk of contracting preventable childhood diseases. They also are under the assumption that if they were to contract one of the diseases that it would be easily treatable.¹⁰

Safety Concerns

A third, and potentially the greatest, reason parents express for refusing vaccinations for their children are concerns about the safety of vaccines. Most of these concerns are based on information these parents have discovered in the media or received from acquaintances. Regardless of whether the stories stem from television, the Internet, radio, or from family and friends, parents are constantly bombarded with other peoples' opinions about vaccinations.^{2,8,10} All of this information can be overwhelming for some parents to sift through, making it difficult for them to make their own well-informed decision.^{8,10} Many of the reports and opinions that bombard parents and cause uncertainty are targeted at the safety of vaccines. They raise doubts about both short-term adverse reactions and the possibility of long-lasting negative effects.^{2,5,9,10} It is these concerns about safety that can cause parents to completely refuse vaccines.

Fredrickson et al⁸ found that the most commonly reported reason parents had for refusing one or more vaccines was other people or media reports. Stories in the popular media, such as social media and large-scale news outlets, are often sensationalized to elicit higher ratings and oftentimes spotlight a rare incident in which a child suffers as a result of an unforeseen side effect of a vaccine. Media that cite problems with components of vaccines (such as thimerosal) and report that vaccines can cause autism, brain damage, or behavioral problems cause parents to be more cautious and have more concerns regarding the safety of vaccines.^{2,5,8-10} Thimerosal, however, has been removed from those vaccines intended for children under 6 years of age for over a decade now.¹¹ Accounts noting these rare occurrences breed fear in the hearts and minds of parents, who overestimate the dangers associated

with vaccinations. Some fearful parents balk at the timing of immunizations. Fear can influence some parents to choose to delay vaccines so their child does not receive more than one vaccine at a time.⁹ They fear that simultaneously administering multiple vaccines may overload their child's immune system, and they think that allowing all of the vaccinations to occur according to the recommended schedule will make the safety risk greater. As a result of this logic, many choose to delay vaccines in order to better protect their children.^{9,10,12,13} While some may view this as a missed opportunity, others believe that a delayed vaccination schedule is superior to not receiving vaccinations at all. Many parents believe the side effects of vaccines are more extensive than what they are told by their physicians and that the risks outweigh the benefits of vaccinating their children.^{9,10} Healthy relationships between a practitioner and parent can go a long way toward helping patients in terms of this concern. Trust is paramount and will help put parents at ease and help them overcome unmerited fears.

Desire for Additional Education

The fourth common thread is that parents want more information regarding vaccinations. They want to be able to make informed decisions about their child's healthcare by knowing both the benefits and risks associated with each vaccine.^{9,10,14} In a study conducted by Gust et al,¹⁴ approximately one-third of parents indicated that they did not have enough access to sufficient information, and the majority of those parents did not think their child's provider was easy to talk to. Many parents desire to have more detailed information regarding the side effects and benefits associated with vaccines expressed in a factual way that does not appear to be trying to sway them one way or the other regarding vaccinating their child.^{8,10}

A vital role pharmacists and other healthcare providers can play would involve the provision of unbiased, factual information relating to vaccines as well as the discussion of these materials with the parents.¹ There are a number of resources online, including the Centers for Disease Control and Prevention and American Academy of Pediatrics Web sites, as well as print resources that can be provided to parents. Parents want to be able to have open conversations with their child's healthcare provider in which

they do not feel judged or attacked.^{2,8,9} Parents would like to have the freedom to be able to ask questions without judgment. Physicians are one of the most important sources of information for parents who are making decisions about their children's healthcare.^{2,8,10} In a study conducted by Kennedy et al¹² noted that 81.7% of parents said their child's healthcare provider was one of the most important sources of information. When parents do not get the information they want from their providers they seek information from other sources that can potentially mislead and misinform them, causing them to make poor choices for their children.^{8,10}

DISCUSSION AND CONCLUSIONS

If pharmacists and other healthcare providers are able to understand the main concerns parents have about vaccinating their children, they can be better prepared to have informative conversations about immunizations. They will also be able to provide the information parents need to make the best-informed decisions for their children. Parents who are hesitant to vaccinate or who refuse vaccines care about their children and want to do what they can to protect them, just like any other parent. It is important for practitioners to have open and frank conversations with their patients and their families so that the families will understand the benefits of vaccination without feeling attacked or judged for having questions about their child's healthcare.^{5,8,9}

Education and taking time with patients have been shown to result in modest improvement in terms of affecting parents' attitudes about immunization, but the exact messages or tools for healthcare providers should use have not been fully discovered.¹⁵ Understanding the source of parents' questions can equip pharmacists, physicians, nurses, and other healthcare providers to speak with patients on a more relatable level and to speak to the areas parents value the most. All healthcare workers should make an effort to stay up to date on the recommended vaccines and to understand why those immunizations are recommended. This information will allow patients to have face-to-face access to reliable information that can help them to make the best decisions for their families. Additional research aimed at evaluating how practitioners can better provide information to parents to help them

see the importance and benefits of vaccinations needs to be conducted.

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