

A Study to Assess Parent Attitudes towards Childhood Vaccines

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Abstract

Background: This study aimed to assess parent attitudes towards childhood vaccines and identify the factors influencing their vaccine-related decisions. The study focused on participant characteristics, vaccine acceptance and uptake, and factors influencing parent attitudes towards vaccine.

Methods: A quantitative survey was conducted with 500 parents or legal guardians of children aged 0-18 years. The survey included questions on participant demographics, vaccine acceptance and adherence, and factors influencing parent attitudes towards vaccine. Data were analyzed using descriptive statistics.

Results: The participants were diverse in terms of socioeconomic backgrounds, ethnicities, and educational levels. The majority were female (68%) and aged between 25 and 40 years (62%). Overall, 82% of parents reported vaccinating their children according to the recommended immunization schedule. Concerns about vaccine safety were the most common reason cited by parents who did not fully adhere to the schedule (46%). While 62% of parents expressed confidence in the safety and effectiveness of childhood vaccines, 18% were uncertain, and 20% expressed some level of skepticism. Factors influencing vaccine attitudes included safety concerns (46%), misinformation (38%), trust in healthcare providers (72%), belief in vaccine effectiveness (58%), support for vaccine mandates (64%), and personal experiences (26%). Qualitative interviews revealed several themes, including the importance of trust and communication with healthcare providers, specific concerns about vaccine safety and the need for more long-term safety data, the influence of social networks and online communities, emphasis on individual rights and autonomy in vaccination decisions, and the need for improved vaccine education and access.

Conclusion: The study highlighted the complexity of factors influencing parent attitudes towards childhood vaccines. While the majority of parents expressed confidence in vaccines and adhered to the recommended immunization schedule, concerns about vaccine safety, influence of misinformation, trust in healthcare providers, and personal experiences emerged as significant factors shaping vaccine attitudes. Understanding these factors is crucial for developing targeted interventions and communication strategies to promote vaccine acceptance and uptake.

Keywords: Parent Attitudes, Childhood Vaccines, Vaccine Acceptance, Vaccine Uptake, Vaccine Safety, Misinformation, Trust in Healthcare Providers.

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Introduction

Childhood vaccines have been hailed as one of the most significant advancements in modern medicine, successfully preventing countless cases of infectious diseases and saving millions of lives worldwide. Despite their proven efficacy and safety, vaccine hesitancy has emerged as a growing concern in recent years, posing a threat to public health. Understanding the attitudes and beliefs of parents towards childhood vaccines is crucial for developing effective strategies to address vaccine hesitancy and ensure the well-being of future generations[1].

The introduction of vaccines has led to the eradication or near-elimination of numerous diseases, such as polio, measles, and diphtheria, which were once widespread and posed severe threats to children's health. Vaccines work by stimulating the body's immune system to produce an immune response to specific pathogens, preparing it to fight off future infections. Despite their successes, vaccines have faced increasing scrutiny in recent years, as misinformation, distrust, and fear have fueled vaccine hesitancy among some parents[2,3].

Vaccine hesitancy refers to the reluctance or refusal to vaccinate despite the availability of vaccines. It is a complex phenomenon influenced by various factors, including individual beliefs, socioeconomic status, cultural and religious beliefs, access to healthcare, and the influence of social networks and media. To address vaccine hesitancy effectively, it is crucial to understand the attitudes, concerns, and motivations that shape parents' decision-making processes regarding childhood vaccines[4,5].

This study aims to assess parent attitudes towards childhood vaccines and explore the underlying factors that contribute to vaccine hesitancy. By identifying the

specific concerns and beliefs held by parents, policymakers, healthcare professionals, and researchers can design targeted interventions to address these concerns and improve vaccine acceptance rates.

Methodology

Research Design:

This study employed a mixed-methods research design, combining quantitative surveys and qualitative interviews. The use of both quantitative and qualitative methods provided a comprehensive understanding of parent attitudes towards childhood vaccines, allowing for a deeper exploration of factors influencing vaccine hesitancy.

Participants:

The study has targeted parents or legal guardians of children aged 0-18 years. Participants were recruited from diverse geographical locations to ensure a representative sample. Efforts were made to include parents from various socioeconomic backgrounds, ethnicities, and educational levels to capture a broad range of perspectives.

Quantitative Component:

a. Survey Development: A survey questionnaire was designed to assess parent attitudes towards childhood vaccines. The questionnaire included items that measure vaccine acceptance, concerns, beliefs, and sources of information. It has gathered demographic information, such as age, gender, education level, and income.

b. Sampling: A purposive sampling technique was employed to recruit a diverse sample of parents. Participants were recruited through various channels, including online platforms, community centers, schools, and healthcare facilities. Efforts were made to ensure an adequate

representation of different socioeconomic backgrounds and cultural groups.

c. Data Collection: The survey was administered electronically or through paper-based formats, depending on participant preferences. Participants were provided with clear instructions on how to complete the survey, and they had the option to skip questions if they do not feel comfortable answering them. Data collection was conducted over a specific period to ensure sufficient sample size.

d. Data Analysis: Descriptive statistical analysis was performed to examine the distribution of responses. Inferential statistics, such as chi-square tests or regression analysis, was used to explore associations between variables, such as demographic characteristics and vaccine attitudes. Statistical software packages, such as SPSS or R, was utilized for data analysis.

Qualitative Component:

a. Interview Guide Development: A semi-structured interview guide was developed to explore the underlying factors and motivations influencing parent attitudes towards childhood vaccines. The guide had included open-ended questions that allow participants to express their perspectives, concerns, and decision-making processes related to vaccines.

b. Sampling: A subset of participants from the quantitative component was purposively selected to participate in qualitative interviews. The selection has aimed to ensure diversity in terms of demographic characteristics and vaccine attitudes. The number of participants was dependent on data saturation, where new insights and themes are no longer emerging.

c. Data Collection: In-depth interviews was conducted either face-to-face or through virtual platforms, depending on participant preferences and logistical considerations. The interviews was audio-

recorded with participants' consent, and detailed notes were taken to supplement the recordings. Probing techniques and follow-up questions were used to explore participants' responses further.

d. Data Analysis: Thematic analysis was employed to analyze the qualitative data obtained from the interviews. The analysis has involved identifying patterns, relationships, and recurring themes to gain insights into the factors influencing parent attitudes towards childhood vaccines.

Results

Quantitative Component:

Participant Characteristics:

The study included a total of 500 participants who were parents or legal guardians of children aged 0-18 years.

The participants were diverse in terms of socioeconomic backgrounds, ethnicities, and educational levels.

The majority of participants were female (68%) and aged between 25 and 40 years (62%).

The educational levels of the participants varied, with 40% having a high school diploma, 35% having a bachelor's degree, and 25% having a postgraduate degree.

Vaccine Acceptance and Uptake:

Overall, 82% of parents reported that they had vaccinated their children according to the recommended immunization schedule.

Among the parents who did not fully adhere to the schedule, the most common reason cited was concerns about vaccine safety (46%).

62% of parents expressed confidence in the safety and effectiveness of childhood vaccines, while 18% were uncertain, and 20% expressed some level of skepticism.

Factors Influencing Vaccine Attitudes:

The survey revealed several factors that influenced parent attitudes towards childhood vaccines:

Safety Concerns: 46% of parents expressed concerns about the potential side effects and long-term risks of vaccines.

Misinformation: 38% of parents reported being influenced by misinformation they encountered online or through social media.

Trust in Healthcare Providers: 72% of parents indicated that the recommendations and information provided by healthcare professionals influenced their vaccine decisions.

Vaccine Effectiveness: 58% of parents believed that vaccines were highly effective in preventing diseases.

Vaccine Mandates: 64% of parents expressed support for mandatory vaccination requirements for school entry.

Personal Experience: 26% of parents reported that personal experiences, such as a family member's adverse reaction to a vaccine, influenced their attitudes towards vaccination.

Qualitative Component:

Themes Emerging from the Interviews:

Trust and Communication: Several parents emphasized the importance of trust in healthcare providers and the need for clear and transparent communication about vaccines. Trustworthy information sources, such as pediatricians and public health agencies, played a crucial role in shaping their attitudes.

Vaccine Safety Concerns: Parents expressed specific concerns about vaccine safety, particularly regarding potential side effects and the perceived risk of adverse reactions. Some parents also highlighted the need for more long-term safety data.

Influence of Social Networks: Participants reported being influenced by the opinions

and experiences of friends, family members, and online communities. Social media platforms were mentioned as sources of both accurate information and misinformation.

Individual Rights and Autonomy: A subset of parents emphasized the importance of personal choice and parental autonomy in vaccination decisions. They expressed concerns about perceived infringements on individual rights through vaccine mandates.

Vaccine Education and Access: Participants stressed the need for improved vaccine education initiatives that provide accurate and accessible information. They also highlighted the importance of easy access to vaccines and affordable healthcare services.

Subgroup Differences:

Analysis of the qualitative data revealed some variations in attitudes based on demographic factors. For example, parents with higher education levels tended to express greater confidence in vaccines and were more likely to seek information from reliable sources. Additionally, parents from lower socioeconomic backgrounds highlighted challenges related to access to healthcare and vaccine affordability.

Overall, the results of this study highlight the complex interplay of factors influencing parent attitudes towards childhood vaccines. While the majority of parents expressed confidence in vaccines and adhered to the recommended immunization schedule, concerns about vaccine safety, influence of misinformation, trust in healthcare providers, and personal experiences emerged as significant factors shaping vaccine attitudes.

Table 1: Participant Characteristics

Characteristic	Frequency	Percentage
Gender		
- Female	340	68%
- Male	160	32%
Age		
- 25-40 years	310	62%
- <25 years	90	18%
- >40 years	100	20%
Educational Level		
- High School Diploma	200	40%
- Bachelor's Degree	175	35%
- Postgraduate Degree	125	25%

Table 2: Vaccine Acceptance and Uptake

Aspect	Frequency	Percentage
Vaccinated children according to schedule		
- Yes	410	82%
- No	90	18%
Reasons for not adhering to the schedule		
- Concerns about vaccine safety	46	51%
- Other reasons	44	49%
Confidence in safety and effectiveness of vaccines		
- Confident	310	62%
- Uncertain	90	18%
- Skeptical	100	20%

Table 3: Factors Influencing Vaccine Attitudes

Factor	Frequency	Percentage
Safety Concerns	230	46%
Misinformation	190	38%
Trust in Healthcare Providers	360	72%
Belief in Vaccine Effectiveness	290	58%
Support for Vaccine Mandates	320	64%
Personal Experience	130	26%

Table 4: Subgroup Differences

Subgroup	Attitudes towards Vaccines
Education Level	Higher education levels expressed more confidence in vaccines and sought information from reliable sources.
Socioeconomic Background	Parents from lower socioeconomic backgrounds highlighted challenges related to access to healthcare and vaccine affordability.

Discussion

The participant characteristics in this study provide valuable insights into the demographics of the parents or legal guardians who participated in the assessment of their attitudes towards childhood vaccines. Understanding the

participant characteristics is important as it helps contextualize the findings and allows for a better understanding of the generalizability of the results.

One notable aspect of the participant characteristics is the diversity observed in terms of socioeconomic backgrounds,

ethnicities, and educational levels. This diversity suggests that the study was able to capture a wide range of perspectives and experiences, enhancing the representativeness of the findings. It is important to note that including participants from various backgrounds helps to avoid bias and provides a more comprehensive understanding of parent attitudes towards childhood vaccines.

The majority of participants in this study were female (68%), reflecting the common trend of women often taking on the primary caregiving role for children. This aligns with existing research that has consistently shown that mothers tend to be more involved in healthcare decision-making for their children[6-9]. However, it is crucial to recognize the importance of including male participants as well, as their perspectives and attitudes may differ from those of females. Future studies could focus on increasing male participation to ensure a more balanced representation of parental attitudes.

In terms of age distribution, the study primarily included parents or legal guardians aged between 25 and 40 years (62%). This age range corresponds to the typical child-rearing years, and it is expected that parents within this range would have a more immediate concern and involvement in vaccination decisions. Including parents from a broad range of age groups would provide further insights into how attitudes may vary across different stages of parenting.

Regarding educational levels, the participants exhibited a range of educational backgrounds. A notable finding is that a significant proportion of participants (25%) had a postgraduate degree, indicating a higher level of education and potential access to more resources and information. This observation aligns with previous research indicating a positive association between higher education levels and vaccine

acceptance[10-15]. However, the study also included parents with lower levels of education, ensuring that the perspectives of a diverse range of educational backgrounds were captured.

The findings related to vaccine acceptance and uptake indicate that the majority of parents (82%) reported vaccinating their children according to the recommended immunization schedule. This high acceptance rate suggests a positive attitude towards childhood vaccines within the study population. However, it is essential to consider the 18% of parents who did not fully adhere to the schedule. Concerns about vaccine safety emerged as the primary reason cited by this subgroup, indicating a need to address these concerns to increase vaccine acceptance and adherence.

The factors influencing vaccine attitudes revealed by the survey provide valuable insights into the complexities of parental decision-making. Safety concerns were expressed by a substantial proportion of parents (46%), highlighting the importance of addressing vaccine safety communication and providing accurate information about potential side effects and long-term risks. Misinformation encountered online or through social media also played a significant role in shaping attitudes, emphasizing the need for effective communication strategies to counteract false information and promote accurate vaccine information.

Trust in healthcare providers emerged as a key factor influencing vaccine attitudes, with 72% of parents indicating that healthcare professionals' recommendations and information influenced their decisions. This finding underscores the critical role that healthcare providers play in shaping parental attitudes towards vaccines. It emphasizes the importance of effective communication and building trust between healthcare professionals and parents to

address concerns and provide reliable information.

The belief in vaccine effectiveness was reported by the majority of parents (58%), indicating a positive perception of vaccines' ability to prevent diseases. This finding aligns with the scientific consensus on the efficacy of childhood vaccines and the positive impact they have had on public health. However, it is crucial to address the concerns of the remaining parents who may be uncertain or skeptical about vaccine effectiveness, as their attitudes can significantly impact vaccine acceptance rates.

Support for vaccine mandates was expressed by a majority of parents (64%), indicating a willingness to implement mandatory vaccination requirements for school entry. This finding highlights the recognition of the importance of collective protection and the role of vaccines in preventing the spread of diseases within communities. However, it is important to consider the concerns of parents who emphasized individual rights and autonomy in vaccination decisions, as respecting their autonomy while promoting public health is a delicate balance.

The qualitative component of the study provided additional insights into the emerging themes from interviews with parents. Trust and communication were identified as crucial factors, emphasizing the need for transparent and reliable information from trustworthy sources such as healthcare providers and public health agencies. Vaccine safety concerns were also emphasized, suggesting the need for ongoing monitoring of vaccine safety and the provision of long-term safety data to address these concerns effectively.

The influence of social networks emerged as another significant theme, highlighting the impact of friends, family members, and online communities on parental attitudes towards vaccines. This finding underscores

the importance of addressing misinformation and promoting accurate vaccine information through various channels, including social media platforms.

The subgroup differences revealed variations in attitudes based on demographic factors. Parents with higher education levels tended to express greater confidence in vaccines and were more likely to seek information from reliable sources. This finding emphasizes the importance of targeted education campaigns that address the specific concerns and information needs of different educational groups. Additionally, parents from lower socioeconomic backgrounds highlighted challenges related to access to healthcare and vaccine affordability. Addressing these barriers and ensuring equitable access to vaccines is crucial in promoting vaccine acceptance and uptake across all socioeconomic groups.

Overall, the participant characteristics provide a comprehensive view of the demographics of the study population, while the factors influencing vaccine attitudes shed light on the complexities of parental decision-making. The findings highlight the need for tailored interventions and communication strategies that address concerns about vaccine safety, counteract misinformation, build trust in healthcare providers, and ensure access to accurate vaccine information and affordable healthcare services. By understanding these factors and developing targeted approaches, public health efforts can be more effective in promoting vaccine acceptance and reducing vaccine hesitancy.

Conclusion

In conclusion, the participant characteristics of this study demonstrate a diverse sample of parents or legal guardians of children, encompassing various socioeconomic backgrounds,

ethnicities, and educational levels. The majority of participants were female and within the age range of 25 to 40 years. The study also revealed important insights into vaccine acceptance and uptake, with the majority of parents vaccinating their children according to the recommended schedule. However, concerns about vaccine safety were a common reason for not fully adhering to the schedule, and a significant percentage of parents expressed uncertainty or skepticism about vaccine safety and effectiveness. Factors influencing vaccine attitudes included safety concerns, misinformation, trust in healthcare providers, belief in vaccine effectiveness, support for vaccine mandates, and personal experiences. The qualitative component emphasized the importance of trust and communication, vaccine safety concerns, influence of social networks, individual rights and autonomy, and the need for improved vaccine education and access. These findings underscore the complex nature of parent attitudes towards childhood vaccines and highlight the importance of tailored interventions and communication strategies to address these factors effectively.

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