PUBLIC HEALTH

OPINIONS AND ATTITUDES OF PARENTS AND HEALTHCARE WORKERS ON HEALTH EDUCATION AND IMMUNIZATION IN TUTIN MUNICIPALITY

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Abstract

Introduction: Negative attitudes and anti-vaccination propaganda are imposed daily on confused parents. In such a context, enhanced health education can play an important role in correctly understanding the role of vaccination in preserving health and changing people's behavior in that direction. The aim of this study was to explore whether the role of health education is adequately addressed within the healthcare system and the wider community. Materials and Methods: A qualitative study was conducted using the COM-B model to assess capability, opportunity, and motivation as three key factors for behavior change. The number of focus groups and number of participants were formed according the international and scientific rules. We conducted a total of 2 focus groups: with parents and with healthcare workers. All invited participants attended. The meetings were held in person, face-to-face, at the Health education Office of the Health Center Tutin between April 1 and May 30, 2024.Discussion topics included the experiences of healthcare workers in implementing immunization, identifying obstacles they face, suggestions for overcoming these obstacles, and for parents, the way they obtain information about vaccines, reasons for refusal, and the possibility of collaboration with healthcare workers and other social structures. Results: According to data from the Institute of Public Health of Serbia, in 2022, the municipality of Tutin had the worst coverage for the first revaccination of the DTaP-IPV-Hib vaccine - only 28.7%.The analysis covered focus groups with a total of 16 participants (9 parents and 7 healthcare workers). Among the parents, 44% were male, and 56% were female, with an average age of 33 years, while among healthcare workers, 29% were male, and 71% were female, with an average age of 41 years. Parents emphasized the need for clearer and verified information about vaccine safety, with 67% obtaining information from social media. Healthcare workers highlighted the importance of intensifying health education through schools and media, as well as the need for intersectoral collaboration. They also noted facing a lack of time and administrative barriers that limit the possibility of individualized approaches to parents. Conclusion: Parents and healthcare workers from Tutin municipality agree on the need for health education and that its planning and implementation in healthcare institutions, schools, and other collectives would contribute to a better understanding and easier decision-making regarding vaccination. Discussions with immunization providers and parents helped us understand their perspectives on the role of health education in improving the vaccination process.

ЈАВНО ЗДРАВЈЕ

МИСЛЕЊА И СТАВОВИ НА РОДИТЕЛИ И ЗДРАВСТВЕНИ РАБОТНИЦИ ЗА ЗДРАВСТВЕНАТА ЕДУКАЦИЈА И ИМУНИЗАЦИЈАТА ВО ОПШТИНА ТУТИН

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Печатарски права: ©2025. Митхат Еминовиќ, Селма Хабибовиќ. Оваа статија е со отворен пристап дистрибуирана под условите на нелокализирана лиценца, која овозможува неограничена употреба, дистрибуција и репродукција на било кој медиум, доколку се цитираа ториганалниот(ите) автор(и) и изворот.

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Извадок

Вовед: Негативните ставови и пропагандата против вакцинацијата секојдневно им се наметнуваат на збунетите родители. Во таква констелација, засилената здравствена едукација може да одигра важна улога во правилното разбирање на улогата на вакцинацијата во зачувување на здравјето и промената на однесувањето на луѓето во таа насока. Цел на оваа студија беше да се истражи дали улогата на здравствената едукација има адекватен третман во здравствениот систем и пошироко во заедницата. Материјал и методи: Се спроведе квалитативна студија, користејќи го COM-B моделот за проценка на способноста, можноста и мотивираноста, како три клучни фактори за промени во однесувањето, како и според меѓународните и научни правила за формирање на потребен број на фокус групи и број на учесници во фокус групите. Спроведовме интервју со вкупно 2 фокус групи: со родители и со здравствени работници. Присуствуваа сите поканети учесници. Состаноците се одржаа лично, лице в лице, во Канцеларијата за здравствена едукација на Здравствениот дом Тутин помеѓу 1 април и 30 мај 2024 година.Темите на разговор беа искуствата на здравствените работници во спроведувањето на имунизацијата, дефинирањето на пречките на кои наидуваат, предлози за нивно надминување, а кај родителите начинот на информирање за вакцините, причините за нивно одбивање, како и можноста за соработка со здравствените работници и други општествени структури. Резултати: Според податоците на Институтот за јавно здравје на Србија, во 2022 година, општина Тутин имала најлоша покриеност за првата ревакцинација на вакцината DTaP-IPV-Hib - само 28,7%. Анализата опфати фокус групи со вкупно 16 учесници (9 родители и 7 здравствени работници). Кај родителите 44% беа од машки, а 56% од женски пол, со просечна возраст од 33 години, додека кај здравствените работници 29% беа од машки, а 71% од женски пол, со просечна возраст од 41 година. Родителите истакнаа потреба од појасни и потврдени информации за безбедноста на вакцините, при што 67%, добивале информации од социјалните мрежи. Здравствените работници укажаа на важноста од интензивирање на здравствената едукација преку училишта и медиуми, како и потребата од меѓусекторска соработка. Тие нагласија дека се соочуваат со недостаток на време и административни пречки кои ја ограничуваат можноста за индивидуален пристап кон родителите. Заклучок: Родителите и здравствените работници од општина Тутин се согласуваат дека е потребна здравствена едукација и дека нејзиното планирање и спроведување во здравствените установи, училиштата и другите колективи би придонело за подобро разбирање и полесно донесување одлуки за вакцинација. Разговорите со изведувачите на имунизацијата и родителите ни помогнаа да ги согледаме ставовите за улогата на здравствената едукациј во подобрата реализација на вакцинацијата.

Introduction

Planned and high-quality health education work can significantly influence changes in people's behavior and attitudes toward public health activities, particularly immunization. Immunization is a groundbreaking scientific and civilizational achievement. The World Health Organization has ranked it second in importance for preserving human health, immediately after the provision of safe water. Thanks to the successful implementation of immunization, millions of lives have been saved[1]. However, vaccination coverage has been declining year after year. Many parents, influenced by the propaganda of individuals and groups against vaccination, refuse to vaccinate their children[2].

The reasons cited for refusing to vaccinate their children lack scientific basis. With quality and well-planned health education, these reasons can largely be refuted, helping parents change their attitudes and beliefs to vaccinate their children. To achieve this, communication and collaboration with parents must be established, experts must be present in the media, lectures by experts organized, and promotional materials published.

There are many factors that influence the formation of incorrect and harmful attitudes and beliefs about vaccines. Therefore, it is essential to investigate the impact of health education on changing these beliefs. The COM-B (Communication, Opportunities, Motivation – Behaviour) model is suitable for assessing this impact. Difficulties arise when quantifying the influence of health education on changing attitudes toward vaccination, which presents a challenge for future work in this field. It is possible to evaluate the impact of any activity aimed at increasing vaccination coverage by measuring the number of people vaccinated or those who refuse vaccination. However, the role of health education is to enable the population to form correct attitudes and beliefs based on scientific evidence. This process is complex, extends over a long period, and encompasses a broader population.

The ability to measure the outcomes of these processes, such as attitudes toward vaccination, complicates the assessment of where health education has a decisive influence on the decision to vaccinate and where it does not3,4.

To identify points and methods of intervention through health education methods, we conducted a qualitative study of two focus groups directly involved in the immunization process. Particularly significant were the attitudes and suggestions of the parent focus group, as their decisions directly determine the percentage of vaccination coverage.

This study aimed to help us understand the experiences and thoughts of healthcare workers and parents regarding the potential for health education to influence behavior and attitudes toward the immunization process.

Materials and Methods

For the purposes of conducting this qualitative study, we used the COM-B model to assess capability, opportunity, and motivation as three key factors for behavior change. We formed two focus groups:

1. Parents or guardians of children who were either not vaccinated at all or partially vaccinated.
2. Healthcare workers involved in the immunization process (planning, execution, and evaluation).

To select participants for the focus groups, we used a practical and stratified sampling method5. Two focus groups were conducted with parents and healthcare workers.

The parent focus group was composed of parents or guardians of children who were either not vaccinated at all or only partially vaccinated, while the healthcare worker focus group included individuals directly involved in the immunization process.

Potential participants were contacted via telephone to verify if they met the criteria, and arrangements were made for the time and place of the focus group meetings. At the beginning of the discussion, the purpose of the study was explained, and participants filled out and signed a form with basic information. Each session lasted between 40 and 60 minutes.

During the discussion, parents presented their experiences, attitudes, and beliefs. They were asked to share their thoughts on the need for health education, improved communication with healthcare workers, and whether educational and other institutions should be involved in the entire process. The discussion was encouraged to develop and foster an exchange of experiences. Participants were also asked to express their opinions on the need to clarify the effects of immunization and possible adverse reactions.

A discussion with healthcare workers was focused on the barriers they identified in implementing immunization. They were invited to share their experiences and thoughts on activities that could potentially increase vaccination coverage and how health education might influence this.

All invited participants attended. The meetings were held in person, face-to-face, at the Health education Office of the Health Center Tutin between April 1 and May 30, 2024.

The inclusion criteria for study participants included:

- Parents with children under the age of 7 who have decided not to vaccinate them or have partially vaccinated them.
- Healthcare workers who are actively involved in the immunization process (doctors, nurses).
- The ability to participate in focus groups and express opinions on vaccination.

Exclusion criteria:

- Parents who have already fully vaccinated their children.
- Healthcare workers with no experience in immunization.
- Individuals who have previously participated in similar studies to avoid bias.

Results

The total of 9 parents participated in focus group. Their age ranged from 29 to 37 years, five were women, and four were men, all with completed secondary education. Most of them were acquainted with one another.

From healthcare workers directly involved in the immunization process, we formed group with a total of seven participants (three pediatricians and four nurses).

Table 1: Characteristics of the Focus Groups:

Focus Group	Number of Participants	Gender (% Male/ Female)	Age (Average)	Education	Key Discussion Topics
Parents/ Guardians	9	44%/56%	33 years	Secondary education	Fears, sources of information, trust in the healthcare system
Healthcare Workers	7	29%/71%	41 years	Higher/ secondary education	Barriers to vaccination promotion, strategies to increase coverage

A) Key insights and results of discussions with parents are presented below.

Concerns and Fear of Vaccines

Our question was: what causes concern among parents, and why is there distrust in vaccines? The answers and perspectives varied. Some parents expressed a lack of trust in the vaccine's effectiveness, doubting its quality. One parent mentioned believing that natural immunity against infectious diseases is better ("Our parents didn't receive vaccines and were healthy"). Another mother shared an unpleasant experience during the administration of the first vaccine dose: *"My baby's thigh swelled up and was very painful. My baby cried nonstop for two hours. After that, I decided not to take them for the second dose."*

Despite their expressed doubt and mistrust, the parents were open to the conversation and listened to other opinions and perspectives. None of them denied the benefits of vaccines or rejected the possibility of starting or continuing the immunization of their children. The primary factor influencing their decision not to vaccinate was fear of potential consequences and side effects: *"I will vaccinate my child if I am convinced that there will be no negative effects on their health."*

Sources of Information About Vaccines

When asked about how they obtain information about vaccines, the responses varied. However, a common theme among all parents was that they did not receive sufficient information from healthcare workers. In their search for the "truth about vaccines," they turned to social media, listening to experiences and opinions shared by acquaintances who claimed that *"vaccines are harmful and part of a larger conspiracy."*

Some parents also mentioned receiving inconsistent advice from healthcare workers: *"One doctor told me to vaccinate my child with the MMR vaccine only after they start walking and talking."*

All parents agreed on the importance of having access to accurate information from experts,and the space to address their doubts and fears. They felt that they were not given enough attention and that the advantages of vaccination compared to the consequences of preventable diseases were not convincingly explained to them: *"The doctor told me they didn't have time for my questions and that I should read the vaccine instructions and decide on my own whether to vaccinate my child or not."*

Parents who had such experiences and sought additional information were more susceptible to disinformation and propaganda from anti-vaccination groups.

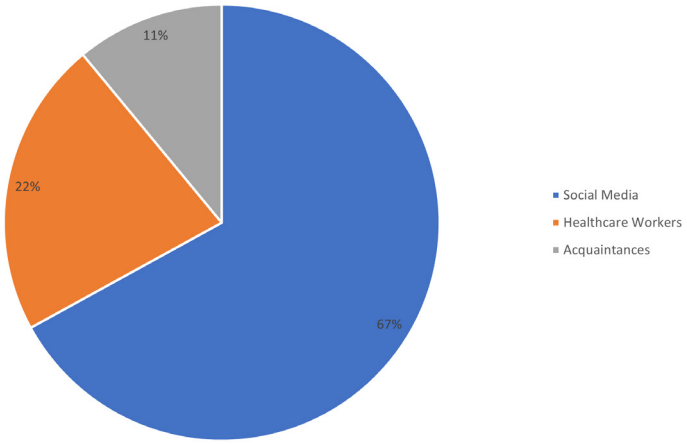


Chart 1: Sources of Information

The Role of Trust in Decision-Making

Parents reported that trust in healthcare workers, as well as their recommendations and advice, plays a crucial role in their decision-making process regarding whether to vaccinate their child. Patient and well-reasoned explanations of the benefits of vaccination in protecting their child's health, provided by knowledgeable professionals, would contribute to making the right decision. Long-term relationships and positive experiences with healthcare workers in delivering other health services also strengthen this trust: *"This doctor treated my other children, and I know she wouldn't recommend something unless she was sure it was good for my child."*

However, this trust can easily be lost if the healthcare worker does not show patience, especially if they do not insist on vaccination, leaving parents uncertain and confused. In such situations, parents often succumb to the influence of anti-vaccination advocates, who exhibit remarkable aggression in discouraging parents from vaccination, using various conspiracy theories and exaggerating or misrepresenting adverse events as "evidence."

The only "arguments" presented by anti-vaccination advocates are anecdotal experiences that are often misinterpreted and distorted: *"A friend told me she knows a woman whose child showed symptoms of autism immediately after receiving the MMR vaccine."*

Long-Term Benefits of Health Education

Health education encompasses numerous methods and forms that, thanks to advancements in communication tools, are accessible to a broad population. Discussions within the focus groups also include elements of education, knowledge exchange, and experience sharing. However, it is particularly important for participants to continue discussions and reflections on vaccination after the session, engaging with family members, friends, colleagues, and others.

The new insights gained during the meetings, and subsequent discussions about vaccination, encourage parents to rethink their attitudes and beliefs. By considering all the benefits of protecting their children with vaccines and the dangers of diseases for unvaccinated children, parents often reevaluate their decisions:

"I didn't know that measles could cause such serious complications and that the vaccine can prevent this without being harmful."

B) During the sessions with healthcare workers, all aspects of the immunization process were discussed, from planning to implementation and evaluation. They shared their experiences and reflected on ways to increase vaccination coverage among the population. They emphasized that health education is particularly significant for restoring trust in the healthcare system and for changing the attitudes and beliefs of those opposed to vaccination.

Collaboration with Parents is Crucial

Healthcare workers involved in the immunization process emphasize the need to identify issues in their relationship with parents and to find appropriate solutions. All agree that health education is highly important and should be planned and implemented at multiple levels, not just within the healthcare system. Schools and educators play a significant role in this process.

It has been observed that parents need more information about vaccines themselves, as well as potential health consequences for their children. Concerned about their children's health, parents often overlook the significant benefits of vaccination:

"One parent, while rejecting vaccination for their child, persistently recounted negative experiences of 'some' parents during vaccination, describing alleged discomfort and illnesses that occurred. When I pointed out that such claims have been disproven by numerous scientific studies, they had no response."

In addition to helping parents make the right decision, it is essential to show understanding for their concerns and to support their need for additional information and consultations with trusted experts.

Mutual Collaboration and Coordination

Healthcare workers have differing opinions on how and when to assist parents in making the decision to vaccinate their children. Some believe the pediatrician's office is the right time and place, while others think health education methods

should be employed through other healthcare system services (e.g., home care services, home visits), as well as through other institutions (e.g., schools, kindergartens, media, lectures, roundtables, NGOs, etc.).

Healthcare workers need to communicate more effectively among themselves and coordinate their vaccination promotion activities. This would strengthen the confidence of healthcare workers and reduce the potential for confusing parents:

"When I recommended that a child should receive the prescribed vaccines, one mother told me her doctor had not given her such advice," shared a nurse.

In addition to patience and understanding toward parents, healthcare workers must contribute to strengthening their authority and trustworthiness. Most healthcare workers agree that good communication—with parents and among themselves—builds and maintains trust.

Barriers to Implementing Health Education

All healthcare workers are aware of the importance of health education, but they emphasize the challenges and obstacles in its planning, implementation, and especially in analyzing its effects on vaccination decision-making. The most frequently mentioned reasons for insufficient engagement in the health education process are a lack of time, being overburdened with providing other services, and excessive administrative tasks.

For parents to develop trust and listen to the recommendations and advice of healthcare workers, the latter must demonstrate patience and persistence. One doctor noted:

"While adhering to all administrative procedures, I have very little time left for examinations, let alone for individual health education efforts."

Another highlighted:"Sometimes, due to a lack of time, we give parents too much information without thoroughly explaining it, leaving them overwhelmed and even more confused."

Schools and other social institutions, which could play a role in the education process, are not involved. This creates an opportunity for anti-vaccination advocates to influence concerned and confused parents through social media and other means.

Table 2: Key Barriers and Solutions in Promoting Vaccination

Focus Group	Barriers	Solutions
Parents	• Doubts about vaccine quality • Fear of side effects • Distrust in the healthcare system • Lack of information	• Health education • Restoring trust in the healthcare system • Improved communication with healthcare workers • Reliable information
Healthcare Workers	• Lack of time and excessive administrative tasks • Poor communication with parents • Anti-vaccination campaigns • Lack of engagement from other services and institutions	• Health education • Better communication • Strengthening authority • Involvement of schools and media

Discussion

Through this research involving focus groups of parents and healthcare workers, discussions were conducted to explore the potential of health education in improving vaccination coverage among the population.

We spoke with parents and those directly involved in the immunization process to understand their experiences, fears, and thoughts on improving the situation. Parents expressed concerns about their children's health and highlighted the need for accurate information about vaccines and their effects to make decisions that would benefit their children. Their dilemmas often stem from the spread of misinformation by anti-vaccination advocates. Comprehensive and high-quality health education could restore trust in the healthcare system, help parents resolve their doubts, and protect their children from infectious diseases. This would ultimately improve vaccination coverage and achieve herd immunity, which acts as a barrier against outbreaks.

There have been many examples of outbreaks caused by a decline in vaccination coverage, such as the measles outbreak in Serbia in 2018, where approximately 6,000 people were infected, and 15 died[6].

Parents considered various arguments when making decisions about vaccination. They also displayed differing preferences for how information was presented and the methods of health education. Some preferred group discussions, while others favored individual approaches. Similar findings have been observed in other qualitative studies on communication preferences[7].

Healthcare workers' thoughts and experiences were generally aligned, agreeing on the necessary steps to improve vaccination coverage through health education. They exhibited a high degree of self-criticism and readiness to put more effort into all phases of the immunization process.

Comparing the responses from the focus group discussions, both parents and healthcare workers agreed on the necessity of health education and that its planning and implementation in healthcare facilities, schools, and other institutions would contribute to better understanding and easier decision-making about vaccination.

Successful implementation of health education and effective communication between parents and healthcare workers involved in immunization could significantly increase the participation of hesitant parents, thereby improving vaccination coverage. The information provided by healthcare workers is often insufficient to convince parents of the undeniable benefits of vaccines.

The perception of responsibility for the lack of health education and evidence-based promotion of vaccination differs between parents and healthcare workers. Healthcare workers, as direct participants in the immunization process, acknowledge some responsibility and demonstrate a degree of self-criticism. They express a willingness to participate in creating and implementing activities in health education involving all societal structures.

Parents, on the other hand, rarely display a critical stance regarding their own knowledge about vac-

cines or the beliefs they have formed based on uncertain and unscientific information.

Healthcare workers understand parents' concerns and criticisms, support intensive health education, and emphasize the need to adapt the healthcare system, promote public health concepts, and involve all societal factors, particularly the educational sector. Health education, through the promotion of immunization, could influence changes in parental behavior[8,9].

The knowledge level of healthcare workers involved in the immunization process is crucial, confirming the importance of direct communication between immunization providers and parents to make the right decision[10,11].

There are few studies that have analyzed the issue of immunization and health education as a tool for achieving better vaccination coverage in this way. One challenge in preparing this study was organizing discussions about the impact of health education on the immunization process with a focus group of parents who lacked sufficient knowledge or experience with vaccination. Researchers in similar studies have faced this issue as well[12].

In this study, we analyzed only the content of the focus group discussions without attempting to classify participants' responses. As the saying goes, "*If something is not classified, it cannot be measured*"[13]. This represents a minor limitation of the study.

On the other hand, participants were free to speak about their beliefs and attitudes in the way they think and understand. This is an advantage of the study, as is the composition of the focus group, including direct participants in the immunization process, whose experiences and thoughts are authentic and critical for analysis and conclusions.

The results of this study highlight key issues in the immunization process and parental perceptions. However, they should be interpreted in the context of methodological limitations. While focus groups allow for a deeper understanding of attitudes, future studies should include a larger number of participants and apply more rigorous sampling methods. Despite these limitations, our findings indicate that parents are interested in obtaining additional information about vaccination and that there is a need to improve communication between healthcare workers and parents.

Study Limitations

Although this study provides valuable insights into the attitudes of parents and healthcare workers toward immunization, several limitations should be considered:

- Sample size: The study was conducted on a small number of participants (16 in total), which may affect the generalizability of the results. A larger and more representative study could provide more reliable data.
- Sampling method: Although the sample was stratified and practical, future studies should employ random sampling to reduce the potential for bias.
- Subjective nature of responses:

The qualitative analysis is based on participants' statements, which may include personal perceptions and experiences that cannot always be generalized.

Conclusion

This study provides an insight into different opinions regarding the emergence and resolution of issues in the vaccination process through the analysis of focus group discussions. Regular communication, along with planned and high-quality health education for the population, can significantly contribute to understanding the importance and benefits of immunization, as well as the risks faced by unprotected individuals.

Healthcare workers directly involved in the immunization process bear a particular responsibility to address parents' fears and concerns through effective communication and accessible health education methods, helping them make informed decisions.

The immunization process, as a topic of health education, should also be a responsibility of other institutions and societal actors, not just the healthcare system.

The problems and solutions identified by the participants in this study can serve as a foundation for further research, especially for attempts to classify and quantify responses[14]. This would enhance the evaluation of the impact of health education on behavioral changes regarding vaccination.

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