

## Vaccine hesitancy – in terms of attitude, awareness, and practice – related to childhood vaccination among Albania parents and caregivers

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### 1. INTRODUCTION

Immunization has saved millions of lives through protection of individual and population from vaccine- preventable diseases (VPDs) (World Health Organization, 2012). Public concerns about vaccination are as old as vaccines themselves and are boosted by false information rapidly spread by online world in which nowadays people spend most of their times (Casara et al., 2019). The outbreak of measles in 2018 demonstrated that the Albanian health system still faces challenges in ensuring compliance with infection prevention and control practices in health-care settings. In a study among European countries in 2018, it was observed an increasing vaccine hesitancy between both the public and health professionals in Europe. (State of the Vaccine Confidence, European Union 2018). In a recent study the European Commission however, observed that vaccine confidence has overall increased since 2018 except in countries such as Greece, Romania, Hungary, and UK (European Union, 2020). Many countries have faced important confidence crises in the past 20 years which have resulted in relevant disease outbreaks nowadays.

Eastern European countries have a shared history of communist leadership which has shaped their vaccination programs, often mandatory. As vaccine hesitancy is context-, time-, place- and vaccine-specific, research needs to be expanded to identify influencing factors not only at the individual level but also at

the community level, the contextual level (such as politics, communication, social etc.) and organizational level regarding vaccine specific issues. The knowledge, behaviors, and attitudes of health care workers (HCWs) regarding vaccinations can influence patients’ decision-making processes. Misinformed personnel may be a barrier to acquiring high vaccination coverage within a population: patients trust in their HCP and HCWs is often associated with their ultimate decision whether to accept or decline vaccines.

Although Albania has had high immunization rates for all the vaccines of compulsory vaccination schedule (WHO and UNICEF, 2021), qualitative and quantitative studies about the public barriers toward immunization in Albania are still missing. The concern is growing since vaccine hesitancy could become a problem with new or newly introduced vaccines such as Covid-19 vaccines. Confidence in vaccines may be considered as an indicator of the confidence in the health system and public trust in the government. The main objectives of this study are:



- Evaluation of attitudes, behaviors, beliefs, hesitancy, confidence, and perceptions of a sample of parents/guardians attending childhood vaccination services in Albania.
- Describe the knowledge, attitudes, practices and beliefs about childhood vaccines among a sample of health professionals (Medical doctors and Nurses), directly involved in the administration of vaccines in Albania.
- Highlight the needs in terms of education and correct information, as well as the relationship and communication between Albanian parents and public health professional figures, to contrast parents' hesitancy.

## 2. MATERIALS AND METHODS

### Data collection method

For this study we have used two standardized and validated questionnaires to be filled in by the subjects. The questionnaires were accessible in paper form and electronic one.

The data collecting staff interviewed parents in health care centers using the specific questionnaire addressed to parents. While the health care professionals filled in individually the questionnaire designed for them. More information was obtained from the individual vaccination schedule of each child. This schedule helped to assess the children vaccination coverage and adherence to immunization program.

For the purposes of the study among parents/caregivers, a standardized questionnaire has been used which was adapted and translated in Albanian language. This instrument was specifically developed to identify vaccine hesitant parents (VHP) and aimed to gathering information on social, economic and/or environmental factors as determinants of health behavior. The original questionnaire which is composed of 44 items categorized in 6 content domains, has been adapted to the Albanian social and life context. Five questions

have been added to the original questionnaire which aim to assess the influence of Covid-19 pandemic in the vaccination of children. Finally, it was translated into Albanian language and pilot tested in a group of parents to estimate the comprehension of the contents by the parents and the time needed to complete the questionnaire which was 5-7 minutes.

While for the purposes of the study among health professionals, another targeted questionnaire has been used. A formative training was conducted to the nurses before the data collection. An information sheet reassuring the confidentiality of the data was distributed to the subjects. The questionnaire consisted of three sections. The first section asked about demographic data. The second one composed mainly of closed-ended questions, aimed to collect information about Health Staff beliefs and attitudes towards vaccinations. While the third section aimed to evaluate the knowledge regarding pediatric vaccine contraindications.

### Geographical Coverage and Sample Selection

There have been 500 parents and 100 nurses/pediatricians recruited for this study from seven different cities of Albania: Tirana, Elbasan, Durres, Vlora, Kruja, Lezha and Shkodra. This sample size enabled us to look for potential differences and similarities in terms of perceptions and knowledge about vaccination among high/low vaccination coverage area and different target groups. The sample unit will be the parent (usually mother)/caregiver of children aged from 6 months to 5 years since this is the most frequent period when vaccine shots are recommended to be done. For each couple, the child will contribute with the vaccination card, while her/his mother with filled questionnaire on parent's knowledge and attitude toward the vaccines. The sample is calculated in order to ensure a power not less than 80% and significance not less than 95%.

The respondents are recruited randomly, considering those who are present at the health care center at the day of interview.

### Data analysis

The statistical elaboration of the data was performed using IBM SPSS Statistics. Statistical Package for the Social Sciences. Data was coded and analyzed using an inductive and deductive thematic analysis approach. We have categorized the respondents into two groups according to their overall level of vaccine confidence according to various domains of the vaccine confidence.

**High confidence:** An individual has high confidence if they agree (“strongly agree” or “tend to agree” to all vaccine confidence survey items.

**Some/low confidence:** An individual has some or low if they do not agree to all vaccine confidence survey items.

### 3. RESULTS OBTAINED FROM THE STUDY

- Demographic characteristics Tirana was the city with most interviewed cases, accounting for 38.1% of the interviewed parents. The second city with the most interviewed cases was Elbasan which had nearly 15% of the interviews, followed by Durres (~13%), Shkodra (~11%), Lezha (~10%), Vlora (~10%) and Kruja (~5%). Most of the parents had a relatively young age belonging to the category of 24-35 years old (45.9%), followed by those who were >35 years old (□ 40%). Only two parents had an age of 18 years old. Most of the interviewed were mothers (91%). In four interviews there was neither mother, nor father the respondent but a tutor.

There were in total 101 health care professionals interviewed. The majority of the interviewed subjects were women (89/101, 88,1%), of which 37 (81.1%) were MD Practitioners and 64 (92.2%) were Nurses. Most of them were in charge in the capital of Albania, Tirana Municipality.

#### *Education and Profession*

**Parents:** Most of the respondents had a university degree (~49%). A few of them had also a postgraduate degree (~10%). Only two respondents were illiterate.

**Health Care Workers:** 47.5% of them got University degree in less than 20 years ago, while 13,9% of them got their degree in more than 20 years ago.

- Social status and income information:

**Parents:** In most of the interviews, the father was not an immigrant. However, a considerable number of them were immigrants (16.8%). The rate of unemployment was relevant (~31% of the respondents). Only 73.9% of the families lived in a house of their own property. Most of the families had only one child (42.5%), followed by those who had two children (40.2%), and those who had 3 children (15.6%)

- Vaccination delay: As regard vaccinations delays, a mean value of 3.9 months ± 2.9 of delay was registered in the sample, with a minimum of 1 month to a maximum of 24 months. When considering the total sample, the percentage of children delaying with vaccination was 31.2% (total number 148). When considering geographical distribution, Durres had the higher percentage of delaying in childhood vaccinations (48.3%); in Tirana there is the majority of children delaying (n.49). These preliminary results need more investigations in order to determine the reasons why in this area vaccination delay is more accentuated, which might be the causes leading to these geographical differences, and if it might relate to the service itself.

- Parental confidence in vaccination: When asked to the parents if they were confident about following up regularly the vaccination calendar, 82% of the responders were fully sure about the follow up of the calendar being a good idea for their child. However, the 1.9% of the sample was strongly not sure about this. More than 86% of the responders reported not having postponed the vaccination for reasons other than disease and allergy. This answer shows a good confidence of Albanian parents in vaccine, with results even better than a recent European Study (Hadjipanayis et al. 2020), where the 80% of the parents reported to have not delayed vaccination.

- Parent's attitudes: Nearly 70% of the parents strongly agreed to the phrase "It is the parent's responsibility to vaccinate his/her child". The 26.9% agreed to the phrase, while 2.3% were undecided. Only one of them disagreed to the declaration. This answer showed a very high level of confidence of Albanian parents in taking children to vaccination. Most of the parents (nearly the 95%) answered that they would vaccinate their second child, confirming the confidence toward vaccines. However, 19 of them (3.7%) replied NO to this question.
- Hesitancy: To the question "how hesitant you are about vaccination" a fairly high number of people (46.3%) responds that they do not feel hesitant at all, and 32% are not hesitant. On the contrary, a small number of people say they are very hesitant (4.8%) or somewhat hesitant (12%). In our sample the percentage of somehow hesitant (12%) was lower than in the overall European Countries (24%), while no specific data were available for different countries. These results confirm the trust of parents in vaccination program.
- Parents' trust in medical information: A statistical analysis of the risk of hesitancy was conducted in relation with "trust in medical information" and "parents' responsibility". The results showed a very high risk of hesitancy (OR 5.35) when parents answered "NO" or they are indecisive to the question "It is my role as a parent to vaccinate my child?". The second significant high risk of hesitancy (OR 2.1) was detected when parents answered to be not confident or low confident with the information given by medical health staff. This result focus on the paramount influence of healthcare providers on parental hesitancy and needs further specific research.
- Trust in vaccine efficacy, safety and confidence

The percentage of Albanian parents that strongly disagree/disagree with the answer "it is better for a child to become immune through the disease rather than the vaccine" was lower

compared with the European Large-Scale Study, 2020 results (38% vs 70%).

The Albanian percentage of "strongly concern" and "concerned" about vaccine unsafety was much higher compared with the European Large -Scale Study, 2020 results (57% vs 7%). These results confirms that the Albanian mothers have cultural difficulties in the comprehension of the topic and need much more information and discussion about vaccine safety with the health staff. In this case it is useful to indicate the health staff to explain the mothers about the significant of unsafety and adverse events anyway they did not fully understand the question. We have to remind that all these parents were taking the children to routine vaccination. 26.3% of the parents were very concerned about the efficacy of the vaccines. These results confirmed that Albanian parents need much more correct information about the severity of diseases prevented by vaccine. In fact, they are concerned but don't refuse the vaccination. Most of the respondents were afraid about vaccine reactions but not major adverse events. Parents need much more information and better communications with health staff.



- Trust in the family physician: Nearly 87% of the respondents had a good level of trust in their physician (scores 9 and 10), with nearly 6% of them had a level of trust of score 8/10. This result confirms a good relationship and trust with the primary care providers.

- COVID-19 and vaccination

In most of the cases (72%) the Covid-19 pandemic has not changed the perceptions of parents about vaccination. Only 23.8% of the parents would vaccinate their child with the anti-covid 19 vaccines if it was available, according to the high hesitancy showed for this new vaccine overall the world. These data need to be updated but are useful for preliminary considerations because the study was conducted during the second phase of the pandemic, and before the vaccination campaign

- Professional Training: only 66% of Health Staff reported having attended conferences or courses on Vaccines in previous 5 years, respectively 65% of MD practitioners and 65% of Nurses. Participation in vaccines conferences and courses played an important role in 80% of the HCW
- Training tools and their impact: University degree is relevant for the majority of HCW. The role of Institutional Websites were found to be irrelevant. Formal University Training played an important role for 77% of the HCWs (very strongly and strongly) in the knowledge of vaccine preventable infectious diseases. The role of discussion about vaccination with colleagues is very important and influences 82% of HCW. The Role of Training Courses influenced 70% of HCWs very strongly and strongly. There are statistically significant differences between of the role of Scientific Literatures and the Institutional websites, both had the highest degree of influence for Medical Doctors compared to Nurses.
- HCW beliefs, attitudes, hesitancy towards vaccinations: It is observed a high percentage (90%) of vaccination confidence among health care workers. To the statement “Vaccines are among the safest and most tested medicinal products”, 32% of the MD and 22% of the

nurses responded to be not confident. To the statement “Conditions such as autism and multiple sclerosis may be caused by vaccines”, 30% of MD and 22% of Nurses responded to be not confident (unsure or partially agree/agree).

- HCW knowledge regarding vaccine contraindications: No one of HCW correctly identified all 10 true and false contraindications to hexavalent vaccine (diphtheria, tetanus, acellular pertussis, poliomyelitis, Haemophilus influenzae type b, hepatitis B) listed. A higher and statistically significant difference was found between Nurses and Practitioners (3,8594 vs 5,4595  $p < 0,001$ ) in their knowledge about false or true contraindications. No significant differences in relation to gender were found. 69% of HCW that answered correctly at least to six questions were more than 64 years old.

#### 4. CONCLUSIONS

The majority of parents in Albania believe in the importance of childhood vaccination and they consider to vaccinate the child as part of their role of parents. Albanian parents reported trust and confidence with health staff and primary care providers. Normal concern is referred when talking about child health, adverse events and vaccine safety, demonstrating their need to obtain better information, education and communication. The study identified a significant correlation between parents hesitancy and trust in vaccine information from health staff. This result calls for more effective and comprehensive communication between parents and medical staff.

The staff of the vaccination services in Albania presents a rather low level of knowledge, in particular as far as contraindications and indications for early childhood vaccines are concerned, doctors have a significantly better knowledge, nurses, as expected, lower. The comparison with Italian pediatricians shows that the knowledge of Albanians is much lower. It is not possible to find the positive role on the knowledge of the training intended as training, courses or other modalities, the only difference is in the role and then in the University degree.

## 5. RECOMMENDATIONS

- The development of training programs for communication between health care workers and parents. Although parents use the Internet to look for information on vaccination, physicians remain the most trusted information source. Building trust with parents is a complex mission which depends on their cultural, economic, civic and social status. Therefore professional and specific programs to address parents vaccination concerns should be tailored.
- Development of prenatal training programs with a comprehensive language for the pregnant women
- Development of awareness programs for the public focusing on the engagement of religious or other influential leaders to promote vaccination in the community.
- Involvement of media for distributing awareness messages about vaccination
- Collaboration with civil society groups to promote vaccination and mobilization of the public resources to increase awareness.
- The development of projects to incentive the participation of more target groups in the issue of vaccination
- Development of a plan to measure and address vaccine hesitancy in the Immunization Program.
- Integrating vaccination information in high school education
- Conducting epidemiological studies to assess the characteristics of hesitant groups and address the hesitancy
- Developing communication risk plans for the public whenever a rumor about vaccination spreads
- The integration or expansion of space given to educational programs related to vaccinations in University Studies. Educating younger individuals about vaccines could shape future vaccine beliefs and behavior.
- The development of continuing education programs related to vaccination
- Development of training programs tailored according to the context and profession with a comprehensive language
- Development of awareness programs for professionals and public
- Integrating vaccination information in the professional exams needed for the certification of health care workers

### Disclaimer

This document is based on the “Vaccine hesitancy – in terms of attitude, awareness, and practice – related to childhood vaccination among Albania parents and caregivers”, carried out by Enkeleda Gjini. The context analysis and drafting of this document has been supported by Health for All, a project of the Swiss Agency for Development and Cooperation SDC, implemented by the Swiss Tropical and Public Health Institute (STPH). The views and recommendations expressed in this publication are those of the author and do not necessarily represent the official opinion of SDC, STPH nor of HAP.

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