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**Titolo tesi:** Pediatric vaccines in Albania: Attitudes, confidence and knowledges among healthcare staff and students to contrast parent's vaccine hesitancy

### **ABSTRACT**

**Background:** Vaccination has a great impact on mortality reduction and the prevention of infectious diseases worldwide. The risk of several vaccine-preventable diseases has been minimised and some infections have even been eradicated because of effective immunisation programmes. While some public concerns about vaccination are as old as the vaccines themselves, they are boosted on the internet occasionally by false information rapidly spreading through social media, as people spend most of their time in the online world nowadays. Misinformation and concerns fuel vaccine hesitancy among health care users. In Albania, in 2018, after many measles-free years, about 300 patients were hospitalised with the disease. Entrenched vaccine hesitancy may have been responsible for this outbreak.

Healthcare professionals are important models for their patients since their individual knowledge and attitudes toward vaccination can influence the patients' willingness and compliance. Yet, vaccine hesitancy can affect health care providers also, seriously risking their contribution to vaccination campaigns.

**Aim:** The aims of this study were: (1) to assess the vaccination attitude, status, knowledge and beliefs of students attending at the Catholic University "Our Lady of Good Counsel" in Tirana, Albania, (2) To assess perceptions, knowledge and vaccine hesitancy among health science students, (3) to measure knowledge, attitudes and beliefs of public health staff concerning childhood vaccination in Albania, and (4) to investigate possible characteristics related to the higher risk of vaccine hesitancy among parents and health professionals.

**Methodology:** Primarily, a survey was conducted from January to February 2019, on the students of the Catholic University “Our Lady of Good Counsel”. A self-administered questionnaire was used to collect demographic characteristics (sex, age and specialisation), and belief about the safety and efficacy of the measles vaccine.

A secondary study was conducted among parents and healthcare providers to measure the knowledge, beliefs and hesitancy towards measles vaccine in childhood; a national cross-sectional study in several Albanian cities, including Tirana, Elbasan, Durres, Shkoder, Lezha, Kruja and Vlora. Data were collected from December 2020 to February 2021. A sample of 475 parents/caregivers of children aged 6 months to 8 years, attending paediatric vaccination rooms in Primary Health Care services, and 101 healthcare providers were interviewed face-to-face. The standardised questionnaire applied included socio-demographic characteristics, knowledge, attitudes, behaviours, beliefs, hesitancy, confidence, and perceptions relating to vaccines. Cumulative scores were used to quantify the opinions of respondents. To test for an association between vaccine hesitancy and possible factors, binary logistic regression was applied. SPSS software was used to analyse the data.

**Results: 1st objective:** Most parents/caregivers (82% ()) believed in the importance of vaccination, wanted their children to get the vaccines, and considered the parental role crucial in the success of vaccination programmes. The majority of the participants demonstrated high levels of trust in primary health care personnel (trust score above 8). On the other hand, more than 45% of the parents/caregivers were not sure about vaccine efficacy, while 26% of them reported concerns about potential adverse events related to vaccination and vaccine safety. Around 17% of the participants were classified as somehow hesitant (12%) or very hesitant (5%) towards childhood vaccination. Nonetheless, the hesitant do not refuse vaccination and comply with health recommendations., Regarding the intention to vaccinate children against COVID-19, when available (the data were gathered before the vaccine against SARS-Cov-2 was certified) nearly 75% of parents/caregivers showed hesitancy.

**2<sup>nd</sup> objective:** Around 90% of the health professionals interviewed were favourable to vaccinations, with almost no difference between physicians (89%) and nurses (90%). Still, only 75% of the doctors and 79% of nurses expressed full confidence in vaccines being important to their patients' health. No one among health care providers correctly identified all 10 true and false vaccine contraindications, with only 35% of the doctors and 13% of nurses answering at least 6 out of 10 correctly. Further, 22%

of the health personnel were unsure or partially agreed that vaccines might cause conditions such as autism and multiple sclerosis. Fourteen percent of them were also unsure whether vaccine policies are influenced by the profit motives of the industry. Only 66 % of the healthcare providers reported having attended conferences or continuing education courses on vaccines in the previous 5 years, without significant differences observed between physicians and nurses.

**3rd objective:** A lower parental attitude toward childhood vaccination (OR = 3.7; 95% C.I. 1.102-12.421), a health center with a high vaccine delay (OR = 2.878; C.I. 95% 1.735-4.773), and low confidence in health staff information (OR = 2.042; 95% C.I. 1.156-3.605) were all independent predictors of parental vaccine hesitancy. Among the health personnel, a higher risk of hesitancy was observed in the younger categories (OR:5.3, CI:1.4–19.5, p=0.013). Similarly, hesitancy was higher in staff with less than 10 years of experience, and in those who had graduated less than 10 years before the survey (OR:4.2 CI:1.2–14.6, p=0.029).

**Conclusions:** Initially, this study highlighted that University health care students, at the beginning of their studies, did not consider measles a serious disease and had misconceptions and hesitancy about the safety and efficacy of the measles vaccine. This survey can be considered a teachable moment in the public health education of new health care students, to improve their professional knowledge. Further research has been conducted during October and November 2020 to evaluate the growth in knowledge on measles vaccination at the end of their academic courses, as well as the changes in perceptions and behaviours. In addition, the following study showed that the majority of parents in Albania believe in the importance of childhood vaccination and consider child vaccination as part of their parental role. Albanian parents, despite reporting confidence in healthcare providers, have legitimate concerns about vaccine efficacy and safety, which highlights the need for more effective and comprehensive communication between parents and medical staff. The observed correlation between parents' hesitancy and lower confidence in medical information underlines also the need for improving the image of primary health care professionals as role models for their patients. Better organization of vaccination sessions by health centres to avoid vaccine delays is another way of addressing vaccine hesitancy, particularly for traditional and well-known childhood vaccines. The hesitancy can be a critical barrier to childhood vaccination when a new vaccine is to be introduced, as is demonstrated in the recent vaccination campaign against the ongoing SARS-CoV2 pandemic.



Finally, the study recommends that healthcare providers engaged in immunisation services should be supported with training, supervision and competencies to ensure that vaccines are provided safely, effectively, and ethically.