

THE STATUS AND SOME FACTORS RELATED TO SAFE IMMUNIZATION PRACTICE AT COMMUNAL-WARD ADMINISTRATIVE UNITS IN PHU YEN PROVINCE IN 2022

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Abstract: Vaccines are preparations containing antigens that are introduced into the body to create an immune response. Therefore, the review of safe vaccination practice (TCAT) in immunization sessions at commune and ward health stations and some related factors is a very necessary and urgent issue to improve the quality of vaccination. Cross-sectional descriptive study design at 20 health stations of Phu Yen province. Results: 100% of health stations meet TCAT requirements during vaccination sessions ; 85.1% of children were trained in the satisfactory injection procedure, the reception and screening procedures and the post-injection follow-up met the requirements of 82.9% and 83.4%, respectively. There are 73.1% of children who have successfully practiced the pre-vaccination counseling process. The analysis results show that a number of factors are related to TCAT implementation, such as staff in charge of the expanded immunization program, medical qualifications, and doctors' qualifications . Besides, injection team with satisfactory general knowledge performed TCAT better than injection team with unsatisfactory general knowledge. Therefore, strengthen supervision and professional training related to vaccination practices of health workers.

Keywords: *C program of expanded vaccination, vaccination procedure, safe vaccination.*

1. Introduction

The Expanded Immunization Program (TCMR) has been implemented in Vietnam since 1981 and up to now, there are vaccines against 10 diseases in the TCMR program. A vaccine is a preparation containing antigens that are introduced into the body by injection or orally to create an immune response. To ensure vaccination safety, it is necessary to have a facility that is qualified for vaccination and that the personnel

involved in vaccination have been properly trained and practiced [1] . In Vietnam, a number of studies on ensuring safe vaccination at commune health stations were carried out from 2012 to 2016 in the provinces of Hanoi, Hai Duong, Bac Ninh and Khanh Hoa. The results of the studies have shown a number of shortcomings that need to be overcome such as the staff performing the injection technique for children not having enough steps of the process or the staff implementing the post-vaccination monitoring process. Mothers have not yet been consulted with sufficient information content, thereby giving

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practical orientations and suggestions to help improve and improve the quality of MR [2]. [3], improve the quality of vaccination at grassroots health care. In Phu Yen, all vaccination facilities in the province have self-declared qualified establishments according to Decree 104/2016/ND-CP, but there is a continuous change of new staff in charge of the job. Although the staff has been trained and granted certificates of safe vaccination, there are still some shortcomings that need to be overcome in the implementation process. such as: pre-injection counseling, post-injection counseling has not been really focused; It is difficult to organize and arrange vaccination sessions to cover all areas because of the large number of vaccinated subjects and some medical stations and facilities that have been used for many years [4] . Therefore, it is very necessary and urgent to review the safe vaccination process during injection sessions at commune and ward health stations, Population and Health Departments (hereinafter referred to as Health Stations). urgent to perfect and improve the quality of vaccination. Starting from the above scientific and practical basis, we carry out the topic “The current situation and some factors related to ensuring safe vaccination during regular vaccination sessions at commune and ward health stations in Phu Yen province in 2022” is carried out with two objectives: 1 . Describe the current situation of ensuring safe vaccination during immunization sessions for children at commune and ward health stations in Phu Yen province in 2022 and some related factors.

2. Research Methods

2.1. Research design

Design cross-sectional descriptive study.

2.2. Place and time of study

Research carried out at commune health stations, wards, population and health departments in Phu Yen province from April 2022 to October 2021.

2.3. Research object

- Health workers directly participate in vaccination at health stations.
- Facilities of health stations are directly related to the organization of vaccination sessions.
- Equipment for expanded vaccination during vaccination sessions at health stations.
- * Selection criteria
 - Medical staff agreed to participate in the study.
- *Exclusion criteria
 - The staff agrees to participate in the research but does not cooperate in the research process.
 - Equipment for expanded vaccination is not yet used.

2.4. Sample size, sample selection

The study sample size is the number of childhood immunizations (vaccination sessions), calculated using the formula for estimated sample size for a proportion in the population:

$$n = Z_{(1-\alpha/2)}^2 \frac{p(1-p)}{d^2}$$

Where: n is the minimum research sample size required. $Z_{(1-\alpha/2)}^2 = 1.96$: Reliability coefficient in α ($\alpha = 0.05$). $p = 0.692$ is the rate of vaccinations

that meet the requirements of safe vaccination at health stations in Van Ninh - Khanh Hoa [5]. $d = 0.05$ is the allowable absolute error between the sample and the study population.

Prophylaxis 5% of injections cannot complete the injection even though the child has been prescribed the injection. The minimum sample size required is $n = 344$. In fact, 350 vaccinations were observed.

* Sampling method:

- Randomize among children who come to receive vaccinations in the expanded immunization program at health stations for observation.

- Select all health workers directly participating in vaccination at the health station to conduct interviews. There were 62 health workers interviewed.

2.5. Research content/indicators OR Concept/measurement of variables

The variables on organization of vaccination sessions include: Arrangement and arrangement of vaccination sessions to ensure safe vaccination; Infrastructure; Equipment; Personnel.

Variables about Practice vaccination procedures for each vaccination session

Variables on related factors: professional qualifications, seniority, years of training, working position, general knowledge factors of medical staff participating in vaccination.

2.6. Data collection tools/technologies/processes

Data collection techniques:

- Observe facilities and equipment, organize vaccination sessions at the health station and the process of medical staff

vaccinating children using checklists. Make a surprise observation and during the observation, the researcher did not interfere with the vaccination process of health workers

- Interviewing health workers directly participating in expanded immunization at health stations using pre-designed interview questions

Data collection tools: The set of interview questions is based on reference to the toolkits of studies with the same goal, carried out in the period from 2012 to 2016 and documents of the Government, the Ministry of Health, and financial documents. Training materials of the National Expanded Immunization Program - National Institute of Hygiene and Epidemiology on Expanded Immunization.

Data collection process: The investigator directly observed the vaccination session and facilities and equipment at the health station and interviewed medical staff directly involved in the expanded vaccination at the health station.

2.7. Data processing and analysis

Collected data were cleaned, entered and analyzed using Epidata 3.1 and STATA software. Analysis of the relationship by When squared test and Fisher-Exact test with statistical significance $p = 0.05$

2.8. Research Ethics

The researcher is committed to keeping the personal information of all research subjects confidential. Research results are only used for scientific research purposes and not for any other purpose.

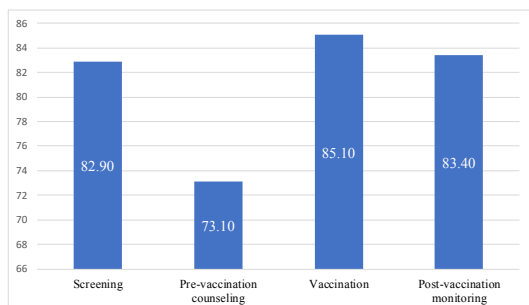
3. Result

3.1. Status of organizing vaccination sessions

Table 1. Status of vaccination sessions (n = 20)

Content	Frequency (n)	Ratio (%)
The health station arranges and arranges vaccination sessions to ensure safe vaccination	20	100
The health station has facilities that meet the requirements of safe vaccination during the vaccination session	20	100
The medical station has the required equipment to ensure safe vaccination during the vaccination session	20	100
Health stations with qualified personnel to organize vaccination sessions	20	100

Comment: Observation results of 20 commune and ward health stations show that all 20 health stations arrange and arrange vaccination sessions to ensure safe vaccination, have qualified facilities, equipment and personnel required to organize vaccination, reaching 100%.



Actual situation of practicing safe vaccination procedures

Chart 1. Actual situation of vaccination procedure practice (n = 350)

Comments: The general assessment of safe vaccination practices showed that: 350 observations, 298 children received satisfactory vaccination procedures, accounting for the highest rate of 85.1%. Next is the practice of reception - screening and post-injection follow-up, which met the requirements of 82.9% and 83.4%, respectively. There were 256 children who received satisfactory pre-vaccination counseling, accounting for the lowest rate of 73.1%.

3.2. Some factors related to the practice of vaccination procedures for children

Table 2. Relationship between personal characteristics and practice of reception - screening of health workers (n=350)

Element		Practice the process of reception - screening		p
		Not achieved	Achieved	
Qualification	Other	7 (41,2)	20 (44.4)	0.817
	Doctor, doctor	10 (58.8)	25 (55.6)	
Workplace	Not in charge	7 (41,2)	7 (15,6)	< 0.05
	In charge of TCMR . program	10 (58.8)	38 (84.4)	

Comment: The results of the survey on the relationship between personal characteristics and the practice of the reception - screening process of health workers show that the staff in charge of the TCMR program perform the procedure better than those who do not. blame. The difference was statistically significant with $p < 0.05$. The survey did not find a statistically significant relationship of professional qualifications to the practice of the reception - screening process.

Table 3. Relationship between individual characteristics and practice of pre-vaccination counseling process of health workers (n=350)

Element		Practice the pre-vaccination counseling process		p
		Not achieved	Obtain	
Qualification	Other	14 (50,0)	13 (38.2)	0.352
	Doctor, doctor	14 (50,0)	21 (61.8)	
Workplace	Not in charge	11 (39.3)	3 (8.8)	< 0.05
	In charge of TCMR . program	17 (60,7)	31 (91,2)	

Comment: The results show that there is a statistically significant difference between the staff in charge of the Expanded Immunization Program who perform better in the pre-vaccination counseling process than those who are not in charge of the program, with $p < 0,05$. The survey did not find a statistically significant association of professional qualifications with the practice of the pre-vaccination counseling process.

Table 4. Relationship between personal characteristics and vaccination practice of health workers (n=350)

Element		Practice vaccination procedures of health workers		p
		Not achieved	Obtain	
Qualification	Other	2 (16,7)	25 (50,0)	< 0.05
	Doctor, doctor	10 (83.3)	25 (50,0)	
Workplace	Not in charge	10 (83.3)	38 (76.0)	0.585
	In charge of TCMR . program	2 (16,7)	12 (24.0)	

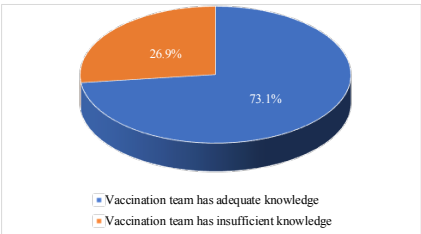


Figure 2. Assessment of general knowledge of staff involved in vaccination session (n = 350)

Comment: The results of the survey on the relationship between personal characteristics and the practice of vaccination procedures of health workers indicated that the group of doctors and doctors practiced the vaccination process better than the rest of the staff group (household women). birth, nursing). The difference was statistically significant

with $p < 0.05$. The survey did not find a statistically significant relationship of work position to the practice of vaccination procedures of health workers .

Comment: Evaluation of the general knowledge of the medical staff participating

in the vaccination session showed that 256 injection teams had satisfactory general knowledge, accounting for 73.1%, and 94 injection teams had unsatisfactory general knowledge, accounting for 26.9%.

Table 5. The relationship between the general knowledge of the staff involved in the vaccination session and the safe vaccination session (n = 350)

Element	Guaranteed vaccinations security		p
	Not achieved	Obtain	
General knowledge is required	42 (44.7)	52 (55,3)	< 0.05
General knowledge is not satisfactory	28 (10,9)	228 (89.1)	

Comment: The results of Table 4 have shown that injection teams with satisfactory general knowledge perform vaccination more safely than injection teams with unsatisfactory general knowledge. The difference was statistically significant with $p < 0.05$.

3. Discuss

3.1. Actual situation of ensuring safe vaccination during injection session

According to Decree No. 104/ND-CP of the Government and Circular No. 34/TT-BYT of the Ministry of Health, during the vaccination session, it is necessary to arrange and arrange injection points to ensure safety and facilities and equipment. , personnel must meet the requirements for vaccination. The study results showed that 20/20 health stations met the standards of arranging and arranging vaccination sessions to ensure safe vaccination and satisfactory facilities, reaching 100% (Table 1). This result is similar to the result of Ngo Thi Nhung's survey in Hai Duong in 2015 [6] because these are mandatory conditions to be granted a certificate

of eligibility for vaccination by the vaccination facility, so the medical stations are seriously implemented. Along with that, the equipment for MR work has been fully equipped and put into regular use at 100% of the medical stations (Table 1). These are very necessary equipment for MR work at the facility to ensure safe vaccination for maximum prevention and timely handling of severe reactions and complications after vaccination. This result is completely similar to the study. Research by author Ngo Thi Nhung (Hai Duong, 2015 [6] 100% of health workers participating in vaccination activities meet the requirements of vaccination organization in which health workers receive specialized training in vaccination. and have a certificate of vaccination safety (Table 1).Participating in professional training is a mandatory requirement for staff to continuously strengthen their knowledge, skills and update new contents of the Immunization program. The survey of the author Ngo Thi Nhung also gave similar results to our survey [6] . However, the survey results on facilities and personnel in our study were

the same. higher than the survey in Van Ninh - Khanh Hoa ((Nguyen Thi Minh Trang, 2015) [5] ; this explanation may be because Van Ninh - Khanh Hoa district is a coastal district and the time of the study was conducted in In 2015, facilities are not fully equipped compared to Phu Yen province at the present time.

Overall assessment of safe vaccination practices based on the survey's standards, there were 298 children who received satisfactory vaccination procedures, accounting for the highest rate of 85.1%. This result coincides with the survey of author Ngo Thi Nhung (Hai Duong, 2015). Next is the practice of the process of reception - screening, which meets the requirements of 82.9%, respectively. Regarding the process of reception - pre-vaccination screening, some content that health workers still miss such as "ask about history of shock, severe reaction after previous injection" or "ask about drug use history". children", this is a very important factor when administering the second and third multiple doses of vaccines. The obtained analyzes are quite similar to those in the study in Hai Duong (Ngo Thi Nhung, 2015).) [6] . With the post-injection monitoring process, it is the last process when the child comes to the clinic for vaccination, in order to promptly handle and provide emergency treatment for serious complications after injection right at the injection facility. Observational results showed that the satisfactory implementation of the post-injection monitoring procedure was 83.4%. This result is lower than the survey in Hai Duong (Ngo Thi Nhung, 2015) and in Van Ninh - Khanh Hoa (Nguyen Minh Trang, 2015), because our study evaluates the content of post-injection

counseling in detail. to parents of medical staff when performing. When practicing the pre-vaccination counseling process, the process has not been fully implemented in all 350 injections, there are 256 children who have successfully practiced the pre-vaccination counseling process, accounting for the lowest rate of 73 ,first%. The results obtained from the study are lower than in the survey of the author Ngo Thi Nhung (95.2%). The reason may be that our study assessed each step in the process while the author's study only assessed it as "guaranteed of time and quality" [6] .

3.2. Vaccination procedure practice

Research on the relationship between vaccination practice has shown that there are some statistically significant associations as follows:

- + The staff in charge of the expanded vaccination program performed the reception - screening and pre-vaccination counseling process better than those not in charge of the expanded vaccination program.

- + Staff who are nurses and doctors practice vaccination procedures better than nurses and midwives.

This could be explained by the fact that the staff in charge of the expanded vaccination program and the medical staff in our study were more involved in these processes and were also key positions in the management of the disease. job responsibilities, thus practice the process proficiently, fully, better than other officers. The relationship drawn in our study is similar to the 2017 study by author Cao Xuan Truong in Thuong Tin - Hanoi when it also found a relationship between professional

qualifications of health workers and health workers. affects compliance with pre-vaccination examination and counseling procedures [2] . This is also an issue that needs to be taken care of when training and briefing at the district health center, it is necessary to have hands-on training sessions for all staff working at the health station so that in emergency situations. There is a shortage of human resources, and especially while the medical staff are having more duties to fight against the epidemic and vaccinate against COVID-19, the regular implementation of professional activities must still be ensured. In the context of the complicated development of the COVID-19 epidemic, it is necessary to focus on expanded vaccination to avoid “epidemic overlap” and absolutely not let dangerous diseases for children return.

The factor of health workers is one of the three important factors of safe vaccination (medical personnel, facilities, and equipment). A team that participates in vaccination at a fixed injection site usually has at least 04 staff, a child’s injection is safe or not depending on all 04 procedures performed by that vaccination team. The study investigates the relationship between knowledge and practice of vaccination by assessing the general knowledge of the injection team based on the evaluation criteria of the survey (calculating the average score of knowledge of the injection team), out of 350 teams. injection, 73.1% of the injection team had satisfactory general knowledge, the remaining 26.9% of the injection team had unsatisfactory general knowledge (Figure 2). When these injection teams perform vaccination sessions, the survey shows that injection teams with good general

knowledge perform better vaccinations to ensure safety than injection teams with poor general knowledge. Statistical significance with $p < 0.05$ (Table 4). This has confirmed the role of mastering the knowledge that has a positive influence on the safe vaccination practice of the staff of the commune and ward health stations of Phu Yen province. Assessing the knowledge of health workers is also an important contribution and is a very objective and honest view of the shortcomings and gaps in the professional performance of health workers so that in each training session. training, researchers have more exchanges, practice and focus on emphasizing practical issues, associated with the work of the staff.

4. Conclusions and Recommendations

100% of health stations ensure safe vaccination requirements during the vaccination session, arrange vaccination sessions to ensure safe vaccination, and are equipped with adequate facilities and equipment. The staff in charge of the Expanded Immunization Program and qualified medical staff and doctors perform better in the vaccination process than other staff. The injection team with satisfactory general knowledge can perform vaccinations to ensure better safety than the injection team with unsatisfactory general knowledge. Therefore, strengthen supervision and professional training related to vaccination practices of health workers.

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