**Socio-demographic characteristics**

1. **Study location**
2. **Age**
3. **Gender**

Male

Female

1. **Type of healthcare center**

Health Post

Primary health care center

Others

1. **Qualification**

Degree or diploma

Certificate or below

1. **Profession**

Doctor

Pharmacist

Nurse

1. **Year of experience in the profession/Rank**

Junior (1–5 years’ experience)

Senior (≥5 years, but neither specialist nor consultant)

Specialist

Consultant

1. **Area of practice**

Immunization clinic

Non-immunization clinic

1. **Employer**

Private facility

Public facility

1. **Year of experience in the EPI**

1–5 years’ experience

5-10

10-20

20+

1. **Training in AEFI surveillance**

Yes

No

1. **Distribution of respondents who had training on AEFI**

Medical or post-graduate training

Workshop or special training program

Online course

1. **Number of AEFI trainings in the past one year**

1-2

3-4

5+

1. **Distribution of symptoms/types of AEFI that occur**

Fever

Pain and swelling at injection site

Redness at the site of injection

Weakness of limbs

Convulsion

Others (diarrhea/vomiting/rash)

No response

**Knowledge of study participants**

**Definition of AEFI acronym**

1. Adverse events following injections
2. Adverse events following immunization
3. Abscess following immunization
4. Diseases with outbreak potential
5. Never heard about it

**Detailed knowledge of AEFI (Main Question)**

**Type 1**

1. AEFI is not limited to vaccination only
2. AEFI can be caused by reconstituted vaccines stored longer than normal, vaccine reaction, inappropriate route of administration, vaccines stored beyond expiry date or contaminated vaccines
3. Skin at the injection site should be stretched during IM injection
4. Paracetamol and ibuprofen are not used routinely to prevent fever before immunization
5. Adrenaline should not be administered by SC route during anaphylaxis following immunization
6. Investigation of an AEFI should commence within 24 h
7. All injection site abscesses should be reported
8. Injection site swelling and redness should be reported
9. Treatment of a coincidental illness falsely attributed as a vaccine reaction should not be delayed until investigations are confirmed

**Type 2**

1. AEFI can be an inherent problem of a vaccine
2. AEFI can be a result of immunization error
3. AEFI can be any adverse event that results after vaccination
4. AEFI can be a result of vaccine quality
5. AEFI can be anxiety-related
6. AEFI as a medical condition is not limited to vaccine-related problems
7. Immunization error cannot be a result of using reconstituted vaccine stored for 3 hours
8. Immunization error can be a result of inappropriate route of administration
9. Immunization error can be a result of using expired vaccines
10. Immunization error can be a result of using diluent other than supplied by the manufacturer
11. Immunization error can be a result of using contaminated vaccines
12. Immunization surveillance aims at early detection and response to AEFI
13. HCPs should report an AEFI, even when they are not confident about the diagnosis
14. As vaccination coverage increases, so does the number of AEFIs
15. Persistent crying following immunization that lasts for three or more hours should be reported
16. AEFIs should be reported as soon as possible, even if details are not available.

**Type 3**

1. Knowledge Identified the correct definition of AEFI
2. Identified all examples of AEFI correctly
3. Identified all examples of serious AEFI correctly
4. Identified all reportable AEFI correctly
5. Identified the correct timeline for reporting

**Type 4**

1. During anaphylaxis, patient’s legs are raised above trunk and given oxygen
2. DPHN receives AEFI reports from facility nurse
3. AEFI investigation examines operational aspects of the program
4. Immunization surveillance aims at early detection and response to AEFI

**Perceptions/Attitude of AEFI**

**Type 1**

1. Believes reporting an AEFI cannot lead to personal consequences/punishment
2. Believes that reporting an AEFI will not make him/her feel guilty about having caused harm to a vaccinee
3. Believes that HCPs are willing to report an AEFI even when they are not confident about the diagnosis
4. Believes that poor monitoring of adverse events can cause reduction of immunization coverage
5. Believes that the process of reporting an AEFI is not long and tedious
6. Believes that if adverse events are reported, something will not done about it
7. Believes that enhancing surveillance of AEFI can help build public trust in immunization program
8. Desires to learn more about how to diagnose, report, investigate and manage AEFI
9. Believes he/she is busy but can still report AEFI
10. Believes he/she is not interested in investigating or reporting AEFI

**Type 2**

1. Reporting fatal adverse events that occur during immunization is not good, as it can create loss of public trust.
2. Public tolerance of AEFI is higher than for adverse effects of drugs, as vaccines provide lifelong protection.
3. Whenever an AEFI related to immunization error is reported, action should be taken against the vaccinator.
4. Enhancing surveillance of AEFI can help build public trust in the immunization program.

**Type 3**

1. Agreed a strong vaccination programme requires a strong AEFI surveillance system
2. Agreed AEFI surveillance is needed for the full assessment of the safety of newly licensed vaccines
3. Agreed health worker has a responsibility to report serious AEFI

**Type 4**

1. Believing that nurses are reluctant to report an AEFI when they are not confident about the diagnosis
2. Believing that investigation of AEFI should be done by clinical officers or doctors and not nurses
3. Believing that nurses play a vital role in diagnosing, reporting, investigating, and managing AEFI
4. Believing that every nurse working at a health facility should know AEFI

**Practice level**

1. Ruling out contraindications to vaccine(s) in a child prior to administration
2. Having an anaphylactic pack with adrenaline in the immunization room
3. Informing the caretaker of possible vaccine adverse reactions and how to treat them
4. Having ever come across a child with injection site swelling, redness, abscesses, BCG lymphadenitis, convulsion, shock, AFP, or fever > 40∘ C and diagnosing it as an AEFI
5. Reporting detecting an adverse event following immunization
6. Participating in AEFI investigation for detected AEFI cases
7. Recording vaccine batch number and expiry date during vaccination
8. Having ever seen an AEFI reporting and investigation form
9. Having AEFI reference guidelines materials at workstation
10. Having relevant AEFI specimen transportation containers

**[if possible, please add some more practice level questions]**

**Reporting behavior**

1. **Last detected an AEFI case**

Yes, at least once in the past year

Yes, at least once in the last 5 years

No, never

1. **Last reported an AEFI case**

Yes, at least once in the past year

Yes, at least once in the last 5 years

No, never

**Type1: Self-described reporting behavior**

1. I have no time to report an AEFI
2. I would report an AEFI only if I am sure it was caused by a vaccine
3. I would only report any serious AEFI
4. I would report all AEFIs

**Type 2: Reasons for not reporting AEFIs**

1. AEFI were not serious
2. Not motivated to report
3. Do not know how to report
4. Time constraint
5. The working environment is discouraging to report
6. Fear that the consequences might fall on me
7. Do not see the importance of reporting

**Type3: Barriers to reporting AEFI**

1. Not considering the event as related to immunization
2. Inability to find reporting form
3. Not knowing about report and reporting system and process
4. Fear that report will lead to personal consequences
5. Planned to do it later, but forgot
6. Time constraints
7. Lack of interest

Abbreviations:

AEFI, adverse event following immunization;

HCPs, health-care professionals

References

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