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Understanding public perception, knowledge, attitude, and preventive practices regarding Avian Influenza (H5N1): a community-based survey

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Abstract

The highly pathogenic avian influenza A (H5N1) virus poses a persistent zoonotic threat with pandemic potential, a risk underscored by its rapid genomic evolution and recent confirmed infections in both mammals and humans. We will assess the perception, knowledge, attitudes, and practices of the general public to identify gaps in awareness and compliance and to validate a tool to assess level of knowledge and preventive practices. The research will also examine the influence of seasonal influenza vaccination on H5N1 preparedness and explore the critical role of trust in health authorities and the impact of misinformation on public behavior. The findings from this study will provide crucial insights for health authorities, enabling them to design more effective, culturally sensitive communication strategies and to implement targeted interventions.

PLAN OF THE STUDY

- 1 A cross-sectional community-based survey will be conducted in Africa and Asia to collect quantitative and qualitative data on public awareness, knowledge, attitude, perceptions, and practices regarding avian influenza (H5N1).
- 2 A validation study will be conducted to validate a tool assessing Knowledge, attitude, and practices (KAP) of general population regarding emerging variances of Avian Influenza.
- 3 The study will target the general public if they are 18 years of age or older, with a focus on high-risk groups such as poultry workers, farmers, wildlife handlers, and market vendors dealing with live birds or animals.
- 4 Supposing that 50% of the participants have sufficient knowledge about Avian Influenza (H5N1) and a margin of error of 5%, adjusted for a design effect of 1.5 for stratified sampling, the power of the study is 80%, the minimum required sample size will be 385. The sample size was calculated using Epi-Info software.
- 5 A non-random sampling technique (convenience and snowball sampling techniques) will be used to collect the desired sample size. Sampling Frame will be a list of households or occupational groups (e.g., poultry farms, market selling fresh meat and poultry).
- 6 A structured self-administered questionnaire will be designed in both local languages and English. The predesigned questionnaire will be uploaded to Google form. The survey instrument will be pretested on a small group (n=30) to assess clarity, validity, and reliability.
- 7 The questionnaire will consist of four sections. The first part will be concerned with socio-demographic characteristics (age, sex, nationality, residence, marital status, education, occupation, and income).
- 8 The second section will assess the awareness and knowledge of H5N1 (e.g., the existence of H5N1, transmission routes and risk factors for infection, common symptoms, preventive measures such as avoiding contact with sick or dead birds, proper hand hygiene, and the importance of seeking medical attention for suspected cases).
- 9 The third section will evaluate attitudes and perceptions of risk and severity (e.g., attitude towards the contagiousness of the infection, how easily the virus spreads between people, the severity of the infection and the potential health consequences of infection).
- 10 The fourth section will include questions about current preventive practices of the participants (e.g., hand hygiene, handling of birds, disposing of poultry waste, and dealing with sick or dead birds).

- 11 Statistical analyses will be conducted to validate the KAP questionnaire regarding emerging variances of Avian Influenza.
- 12 A new study will be conducted to assess public perception, knowledge, and practices towards Avian Influenza using Health Believe Model (HBM).
- 13 A new study will be conducted based on the previous two studies results to assess perception and KAP of general population and population at risk.
- 14 The next study will include new section that will inquire about the acceptance and utilization of Seasonal Influenza vaccination (e.g., used to take the vaccine annually, previous taking of vaccine, if he take the vaccine this year, planning to take the vaccine in the future, refuse to take the vaccine).
- 15 This study will also have new section of the questionnaire that explore the barriers that participants face in adopting preventive measures against H5N1 through a combination of open-ended and closed-ended questions. Open-ended questions will allow participants to freely express their concerns, challenges, and perceived obstacles in implementing recommended preventive measures. Closed-ended questions, through multiple-choice, will provide quantitative data on specific barriers, such as lack of access to information, economic constraints, cultural barriers, or perceived lack of effectiveness of preventive measures.
- 16 Other new section will be added to assess public trust in information sources related to H5N1, such as government agencies, health organizations, and the media. It will also investigate barriers to effective communication and trust-building between health authorities and the public, and explore how misinformation can influence public perception of risk and compliance with H5N1 prevention guidelines. Both qualitative and quantitative methods will be employed to gather this information.
- 17 A new study will be conducted to perform an environmental risk assessment through community surveys. We will map community exposure to H5N1-related environmental risks, such as proximity to poultry farms and live animal markets, frequency of interaction with birds or contaminated environments, and waste management practices for poultry and livestock. Furthermore, the study will evaluate community awareness and perceptions of these environmental hazards and identify existing community-level preventive practices that help mitigate these risks.
- 18 A new qualitative study will be performed to assess countries preparedness regarding any new Influenza epidemic by assessing existing plans and logistics for facing possible epidemics.

Ethical Considerations

- 19 The researchers obtained the approval of the Ethics Committee of the High Institute of Public Health for conducting the research and the IRB number is 00013692. The researchers will comply with the International Guidelines for Research Ethics laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.
- The purpose of the research will be stated at the beginning of the questionnaire and each participant will answer a question present at the start of the survey asking for acceptance for participation and the answer with "YES" is considered a consent to participate in the study.
- Participants will be able to withdraw from the survey at any time.
- Anonymity and confidentiality will be assured and maintained.
- There is no conflict of interest.

Statistical Analysis

- 20 The collected data will be subjected to statistical analysis by the use of suitable techniques to achieve the objectives of the study.

Protocol references

(1) Pandemic potential of influenza virus. (2) Genetic exchange in viruses. (3) 1918–1920 pandemic (Spanish flu). (4) H5N1 infections in mammals. (6) CDC confirmation of H5N1 in Texas. (7) Public awareness and perception. (8) Biosecurity measures. (9) Barriers to preventive measures. (10) Facilitators for compliance. (11) Seasonal influenza vaccination. (12) Co-circulation of H5N1. (13) Public trust in information sources. (14) Health responses to outbreaks. (15) Impact of misinformation. (16) Vaccine hesitancy. (17) Risk perception. (18) Identifying outbreak hotspots. (19) Environmental risks. (20) Community awareness.

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