

SHORT COMMUNICATION

**KNOWLEDGE AND AWARENESS REGARDING AVIAN INFLUENZA OF
BACKYARD CHICKEN FARMERS IN ESCALANTE CITY,
NEGROS OCCIDENTAL, PHILIPPINES**

Jehu C. Tuto¹, Kent M. Solomon¹, Jonel R. Selibran¹, Aries B. Cabus¹,
Joseph Isidro S. Betita III¹ and Wilfredo V. Andico, Jr.¹

ABSTRACT

This study was conducted on backyard chicken farmers of Escalante City, Negros Occidental to assess their knowledge and awareness of the disease. Despite most of the respondents being aware of AI, a huge fraction believe that the disease is caused by bacteria. Moreover, most of them have low knowledge and awareness about the disease, which is supported that none of them obtained knowledge through seminars, professional assistance, or membership in any chicken-raising associations. Similar studies should be conducted by other LGUs and the government must be proactive in information dissemination about the disease.

Keywords: Avian Influenza, backyard chicken farmers, knowledge and awareness, Negros Occidental

The Philippine chicken industry constitutes one of the main livestock commodities in the country, second only to the swine industry (PSA, 2020). Avian Influenza (AI) is a highly contagious viral disease in all avian species that raises a potential impact on the poultry industry globally (Si *et al.*, 2013). Recently, in the Philippines, three significant AI outbreaks had greatly affected the Philippine poultry industry. The first outbreak occurred last 2017 (BAFS, 2021); the second outbreak last 2020 (Lee and Lao, 2018); and the third outbreak started in March 2022 and continues until the writing of this paper (DA Communications Group, 2022).

The province of Negros Occidental is number one in native chicken production and is a predominantly backyard chicken-producing province (PSA, 2020), it is a risk in terms of disease spread since backyard farms have limited resources to mitigate disease spread (Conan *et al.*, 2012). Aside from being a disease of birds, AI's zoonotic potential is a threat to public health, thus, knowledge about the disease is vital in its prevention (Charania *et al.*, 2014). Since backyard chicken raisers are more exposed to chickens, an initial assessment of knowledge and awareness should start with them. In this regard, this study will highlight the knowledge and awareness of backyard chicken raisers regarding avian influenza. Moreover,

¹College of Agriculture and Allied Sciences, Northern Negros State College of Science and Technology - Escalante Campus, Brgy. Hda. Fe, Escalante City, Negros Occidental, Philippines, 6124 (email: wvandicojr@nonescost.edu.ph).

the results of this study could also serve as a guide to decision-makers, chicken farmers, and the government in formulating preventive measures against the potential spread of AI in the future.

The study was conducted in Escalante City, Negros Occidental (10° 50' N, 123° 30' E; 10.8412, 123.4992), from January 2021 to May 2021. At about 24,000 households found in Escalante City, 378 respondents were needed for the study and is allocated per Barangay using the sampling method of The Research Advisors (2006) with CI = 95% & SE= 5%.

The questionnaire was established to assess knowledge and awareness of Avian Influenza. The respondents' socio-demographic status was also included. It was assessed and corrected accordingly by the Research and Development Office of NONESCOST to ensure its validity and reliability. Personal door-to-door interviews were conducted after permission from the Brgy. Captains, and informed consent from the respondents stating the purpose of the study.

All data were encoded in and analyzed using Microsoft Office Excel with XLSTAT Basic (version 2020.1.3). From the questionnaire, variables concerning knowledge and awareness about AI were analyzed using multiple correspondence analysis (MCA), and variables on respondents' socio-demographic status were analyzed using descriptive statistics.

The response rate reached 84.39%, which exceeded the minimum requirement of 70% set by Thrushfield (2005), as cited in Andico and Peña (2019), to be sufficient for evaluation. The average age of the respondents was 39.39 years old. The average chicken raising experience of respondents was about 9 years. Most of the respondents were male (78.06%), married (89.97%), attained secondary-level education (64.58%), and considered chicken raising as their secondary source of income (50.47%). All of them have not attended any seminars related to chicken production, have no membership in any chicken raisers association and do not rely on any professionals to assist in production.

Table 1 shows the descriptive statistics of respondents' knowledge and awareness of AI, and figure 1 shows the MCA solution for the variables regarding respondents' knowledge about Avian Influenza (AI). The total variance is 28.21%. Dimension 1 was influenced by the perception of AI as a serious disease (0.491), and knowledge about AI affects chickens (0.339), whereas dimension 2 is influenced primarily by respondent's knowledge of the availability of a vaccine against AI (0.474), and occurrence of AI in other birds (0.278). Surprisingly, respondents who claimed to know about AI perceived that bacteria cause the disease. Moreover, they knew that the disease occurs not only in chickens but also in other birds and are confident that Escalante City is prepared for a possible AI outbreak (upper left quadrant). On the other hand, respondents who claimed that they don't have sufficient knowledge of AI perceived that the disease poses a great threat to the country, and believes that it infects both chickens and humans (lower left quadrant).

The spread of AI globally is considered to be non-stop and the poultry industry is under threat (Rodriguez *et al.*, 2007). One goal to lessen the spread of the disease and its effects is to increase the knowledge and awareness of farmers in the poultry industry about AI.

Seeking assistance from professionals by providing technical knowledge through various means can optimize farm productivity (Salami and Ahmadi, 2010). Other authors stated that the more knowledge about AI, the more likely to become proactive in formulating preventive measures (Rehman *et al.*, 2022), however, the respondents did not seek out professional help. In fact, chicken farmers in Escalante City do not have access to seminars,

Table 1. Summary statistics on knowledge and awareness of backyard chicken farmers about AI in Escalante City, Negros Occidental.

Variable	Response	Frequency (n=319)	Proportion (%)
Farmers are aware on AI	No	306	95.93
	Yes	13	4.07
AI Cause	Bacteria	193	60.50
	Virus	126	39.50
Seminar on AI attended	None	319	100.00
AI has Vaccine	No	190	59.56
	Yes	129	40.44
AI still present in the Philippines	No	99	31.03
	Yes	220	68.97
AI infects Chicken	No	25	7.84
	Yes	294	92.16
AI infects other Birds	No	136	42.63
	Yes	183	57.37
AI infects Humans	No	104	32.60
	Yes	215	67.40
Escalante City is prepared for AI outbreak	Maybe	152	47.65
	No	10	3.14
	Yes	157	49.21
AI is a serious disease	No	4	1.25
	Yes	315	98.75
AI info sources	No	74	23.20
	Yes	245	76.80

professional assistance, or membership in any chicken-raising organization. Non-access is because respondents raise chickens as a secondary source of income or as a hobby which coincides with a study by Andico and Peña (2019) where the study is conducted on pig raisers of the same province. This can be detrimental to the farmers of the said LGU, especially as these resources can help increase their knowledge about chicken raising and economically important diseases in chickens, but they don't perceive it as their priority.

Moreover, though a majority of the respondents have limited knowledge about AI, a relevant percentage was still aware of the disease, its severity, the animals it affects, and its zoonotic potential (Table 1). This is influenced by their access to television which is considered the main source of information about the disease, which coincides with the study of Bernardes and Peña (2020). Even though the majority of the respondents are confident that Escalante City is prepared against a potential AI outbreak, there is a small difference in the percentage compared to respondents who are unsure if their LGU is prepared for it (Table 1). The small difference might be associated with the false news that AI entered the vicinity of Escalante City (Felix, 2005), and the proactive response of the Provincial Veterinary Office of Negros Occidental in times of AI threat in the country (Nicavera, 2017; Guadalquivir, 2022).

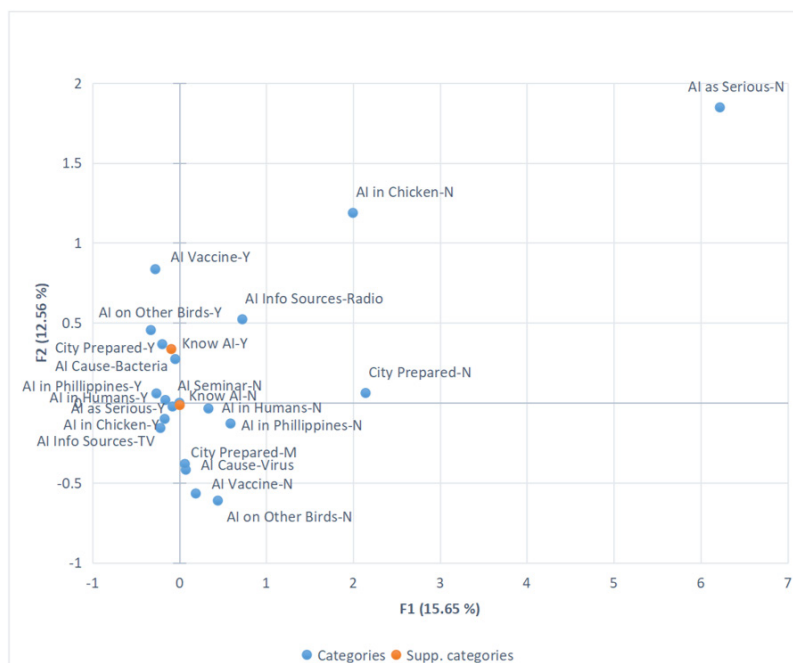


Figure 1. MCA solution on knowledge and awareness of backyard chicken farmers about AI.

A study by Neupane *et al.* (2012) found that persons who have more awareness about AI, practice more preventive measures against the disease than those who are not, but the opposite is true in this study. The DA Communications Group (2022) reported that AI has re-emerged in Luzon but is now under control, however, if the case happened at the LGU, there would be a chance that the disease might spread due to low knowledge and awareness of backyard-chicken farmers towards AI.

Backyard chicken farmers of Escalante City have low knowledge and awareness of AI, therefore, improvements to the knowledge of the disease should be considered. It is recommended that the government of Escalante City, and also the province of Negros Occidental, be proactive in information dissemination regarding the disease not only to the chicken farmers but also to the general public since the disease is zoonotic and is already spreading throughout the country. Also, management and biosecurity measures of chicken farmers in Escalante City should be assessed, to formulate preventive measures to block the entrance of the disease to the locality.

ACKNOWLEDGMENT

The authors would like to thank the chicken farmers of Escalante City, Negros Occidental for their cooperation in making this study possible, the Faculty and Staff of the College of Agriculture and Sciences and also the Research and Development office of NONESCOST for the technical support. And special thanks to Dr. Antonette Sia and Dr. Divine Thea C. Bernardes for their constructive criticism of the study.

REFERENCES

- Andico WV Jr and Peña ST Jr. 2019. Biosecurity practices in high throughput Philippine backyard pig herds: a multiple correspondence analysis. *Int J Vet Sci* 8(4):316-323.
- Bernardes DTC and Peña ST Jr. 2020. Biosecurity and readiness of smallholder pig farmers against potential African swine fever outbreaks in Baybay City, Leyte, Philippines. *Sci Agropecu* 11(4):611-620.
- Bureau of Agriculture and Fisheries Standards [BAFS], 2021. *Avian Influenza*. Retrieved on 8 April 2022 from http://www.bafs.da.gov.ph/bafs_admin/admin_page/publications_pdf/2TB_BIRD_FLU_DMM.pdf.
- Conan A, Goutard FL, Sorn S and Vong S. 2012. Biosecurity measures for backyard poultry in developing countries: a systematic review. *BMC Vet Res* 8:240.
- Charania NA, Martin ID, Liberda EN, Meldrum R and Tsuji LJS. 2014. Bird harvesting practices and knowledge, risk perceptions, and attitudes regarding avian influenza among Canadian First Nations subsistence hunters: implications for influenza pandemic plans. *BMC Public Health* 14:1113.
- DA Communications Group. 2022. FROM PNA: *Bird flu outbreak in Luzon remains under control*. Retrieved on 8 April 2022 from <https://www.da.gov.ph/from-pna-bird-flu-outbreak-in-luzon-remains-under-control/>.
- Felix R. 2005. *DA: No bird flu case in Escalante*. PhilStar Global. Retrieved on 8 April 2022 from <https://www.philstar.com/headlines/2005/11/09/305978/da-no-bird-flu-case-escalante>.
- Guadalquiver N. 2022. *NegOcc enforces 16-day ban on entry of birds, poultry products*. Philippine News Agency. Retrieved on 8 April 2022 from <https://www.pna.gov.ph/articles/1168715>.
- Lee H and Lao A. 2018. Transmission dynamics and control strategies assessment of avian influenza A (H5N6) in the Philippines. *Infect Dis Model* 3:35-39.
- Neupane D, Khanal V, Ghimire K, Aro AR and Leppin A. 2012. Knowledge, attitudes and practices related to avian influenza among poultry workers in Nepal: a cross sectional study. *BMC Infect Dis* 12:76.
- Nicavera E. 2017. *NegOcc sustains own 'balut' requirement amid bird flu fear*. Philippine News Agency. Retrieved on 8 April from <https://www.pna.gov.ph/articles/1006776>.
- Philippine Statistics Authority [PSA]. 2020. *2015-2019 Livestock and Poultry Statistics of the Philippines*. Retrieved on 8 April 2022 from https://psa.gov.ph/sites/default/files/L_P%20stat%20of%20the%20Phil_signed.pdf.
- Rehman S, Rantam AF, Batool K, Rahman A, Effendi MH, Rahmahani J and Jamal M. 2022. Knowledge, attitude, and practices associated with avian influenza among undergraduate university students of East Java Indonesia: A cross-sectional survey *F1000research* 11:115.
- Rodriguez UPE, Garcia YT, Garcia AG and Tan RL. 2007. Can trade policies soften the economic impacts of avian influenza outbreak? Simulations from a CGE Model of the Philippines. *Asian J Agric Dev* 4(2):41-50.
- Salami P and Ahmadi H. 2010. Review of farm management information systems (FMIS). *NY Sci J* 3(5):87-85.
- Si Y, De Boer WF and Gong P. 2013. Different environmental drivers of highly pathogenic avian influenza H5NI outbreaks in poultry and wild birds. *PLoS One* 8(1):e53362.

The Research Advisors. 2006. *Sample Size Table*. Retrieved on 8 April 2022 from <https://www.research-advisors.com/tools/SampleSize.htm>.