

Factors that Influence Rabies Dog Vaccination Among Dogs' Owner in Sukabumi District, West Java

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Abstract—Sukabumi District located in West Java Province has not been free from rabies diseases. Thus, rabies should be taken seriously through several control programs. One of the programme were rabies mass vaccination targeting 80% vaccination coverage, however, there is many dog's owners did not want their dog being vaccinated. This study aimed to determine and to analyze the influence factors on dog vaccination program amongst dog's owner in Sukabumi District. A total of 141 dogs' owner was selected as respondents. Data were collected using structured questionnaires by interviewing the respondents. The Chi-Square Test and Gamma Correlation Test were used to determine the influence factors on dog vaccination practice. The result showed that there were three significant factors which influence the dog vaccination : 1) the income level ($\chi^2=41.725$, $p=0.000$), 2) the experience of dog's ownership ($\chi^2=15.485$, $p=0.006$), and 3) the knowledge about rabies ($\chi^2=15.712$, $p=0.006$). The income level ($r=0.503$) and the knowledge about rabies ($r=0.469$) were two factors that influence most with a strong and positive correlation. Based on our results, we can find the solution to alter the attitude and practice of dog's owner on dog vaccination program. Two influence factors could be improved to increase the participation of dog's owner to follow the rabies vaccination program.

Keywords—rabies, vaccination, dog's owner, influence factors

I. INTRODUCTION

Rabies is endemic in Indonesia whereas 24 of the 34 provinces have this serious problem. West Java is a province in Indonesia which are reportedly not free from rabies and plan to be declared free from rabies. Some

districts in West Java are a dog supplier for several areas in Jakarta Province, Central Java Province and West Sumatra Province, and one of the districts is Sukabumi District. This district has not been free from rabies because they still have reported cases of rabies in animals and there are rabies positive cases [1]. Thus, rabies should be taken seriously through several control programs. One of the programme were mass vaccination targeting 80% coverage of the dog population for the success of the rabies eradication. Over 90% of human deaths from rabies worldwide are caused by dog bites. Mass vaccination, along with the effective control of dog populations, has been used successfully in many countries to control this disease. A lower success rate in developing countries is due to a number of factors, including vaccination campaigns that do not cover a sufficient number of animals or reach all communities [2]. However, the constraints are not all dog owners want their dog being vaccinated. This makes the rabies control programs becomes more difficult. Majority of dog owners are wild boar hunters and using their dogs for hunting and so many reasons given for refusing the dog vaccination program [1]. Therefore, this research was aimed to determine and to analyze the influence factors on dog vaccination program among dog's owner in Sukabumi District.

II. MATERIALS AND METHODS

A. Respondents

A total of 141 dog's owner was selected as respondents. Respondents were drawn from two sub-districts in Sukabumi District as many as 66 people from Jampang Tengah sub-district and 75 people from Cisolok sub-district.

B. Data Collection

Data was collected using structured questionnaires by interviewing the respondents. The component on the questionnaires consisted of the respondents' characteristics and rabies vaccination practice. Pre-test and validity test of questionnaires were done before the questionnaires were used on the field in order to determine the suitability of the questionnaires.

C. Data Analysis

The design used for this study was the quantitative research design. The data was analyzed using descriptive statistics and nonparametric test. The Chi-Square Test and Gamma Correlation Test were used to determine the influence factors on dog vaccination practice.

III. RESULTS AND DISCUSSION

A. Dog's Owner Characteristics

The result showed that majority of respondents (75.8%) had low educational level and most of them (56.7%) hadn't been exposed from the information about rabies. 59.6% respondent worked as farmer/hodge with low income level below one million rupiah (69.5%). Their experience on raising the dogs mostly (53.2%) under 3 years and they kept the dogs for boar hunting purposes (62.4%). Moreover, majority of them (82.3%) never vaccinate the dogs especially for rabies vaccination and 22.7% of respondents had poor knowledge about rabies. The information about respondent characteristics showed in Table 1.

TABLE I. CHARACTERISTICS OF DOG'S OWNER IN SUKABUMI DISTRICT

Respondent characteristics	n	%
Low educational level		
• No school	15	10.6
• Elementary school	92	65.2
Work as a farmer/hodge	84	59.6
Low income level (<1 million rupiah / month)	98	69.5
Low experience of dog's ownership (<3 years)	75	53.2
Never got information about rabies	80	56.7
Keeping dogs for boar hunting	88	62.4
Never vaccinate the dogs	116	82.3
Poor knowledge about rabies	32	22.7

B. The Influenced Factors on Dog Vaccination

The study found out that there was a significant relationship between the respondent characteristics to the dog vaccination practice. The variables which were determine as possible influence factors are educational level, income level, rabies information access, experience of dog's ownership, and knowledge about rabies. The influenced factors on dog vaccination practice showed in Table. 2.

TABLE II. THE INFLUENCED FACTORS ON DOG VACCINATION PRACTICE

Variables	χ^2	p value
Education level	1.107	0.919
Income level	41.725	0.000*
Rabies information access	2.177	0.140
Experience of dog's ownership	15.485	0.006*
Knowledge about rabies	15.712	0.006*

*Significant at $p < 0.05$

The result showed that there were three significant factors which influence the dog vaccination those were the income level ($\chi^2 = 41.725$, $p = 0.000$), the experience of dog's ownership ($\chi^2 = 15.485$, $p = 0.006$), and the knowledge about rabies ($\chi^2 = 15.712$, $p = 0.006$). On those three factors, there were only two factors that influence most with a strong and positive correlation those were the income level ($r = 0.503$) and the knowledge about rabies ($r = 0.469$). Education is an important factor for people to increase their knowledge and awareness about vaccination [3]. Moreover, the acceleration of people's knowledge in the community can support the success of the disease control program [4, 5]. However, the level of knowledge can be increase by facilitate the rabies information access on peoples [6].

IV. CONCLUSION

From this study, we can find the solution to alter the attitude and practice of dog's owner on dog vaccination program. Two influence factors could be improved to increase the participation of dog's owner to follow the rabies vaccination program. The level of income can be increased with the enhancement of the economic conditions but of course it would take a long time. Another influence factor that is easily improved is the level of knowledge of dog's owner, for example through extension and advisory services related to the risk of rabies and the importance of dog vaccination for rabies control program.

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REFERENCES

- [1] A Wicaksono, AZ Ilyas, E Sudarnika, DW Lukman, Y Ridwan, Knowledge, Attitude, and Practice Study of Dog Owners Related to Rabies In Sukabumi Distric, West Java. Jurnal Veteriner 19(2):230-241 (2018).
- [2] NA Ceballos, D Karunaratna, AA Setien, Control of Canine Rabies in Developing Countries: Key Features and Animal Welfare Implications. Rev. sci. tech. Off. int. Epiz 33(1), 311-321 (2014).
- [3] J Regmi, "Socio-cultural Influences on Vaccination-Vaccinators Perspective, Study from Nepal," MSc. thesis, University of Eastern Finland, 2014.

- [4] A Wicaksono, M Sudarwanto, Increasing of Milk Quality in Small Scale Dairy Farms in Boyolali through Extension and Advisory for Dairy Farmers. *Jurnal Agrokreatif* 2(2), 55-60 (2016).
- [5] A Wicaksono, E Sudarnika, C Basri. Biosecurity Condition on Bird Vendors Related to Avian Influenza in Jakarta. *Jurnal Sain Veteriner* 35(2), 269-276 (2017).
- [6] T Guadu, A Shite, M Chanie, B Bogale, T Fentahun, Assessment of Knowledge, Attitude and Practices about Rabies and Associated Factors: In the Case of Bahir Dar Town. *Global Veterinaria* 13(3):348-354 (2014).