

Scale to Measure Attitude of Tribal Livestock Owners towards Vaccination in Ruminants

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ABSTRACT

The study was conducted to develop and standardize the reliable and valid scale, to measure attitude of tribal livestock owners towards vaccination in ruminants. Appropriate statistical methods 'Scale product method' was used, which combines Thurston and Likert techniques. Twenty five (25) statements were selected for judgment; a panel of 50 judges was requested to assign the score for each statement on five point continuum. Based on the scale (median) and Q values, fourteen (14) statements were finally selected to constitute attitude scale to measure towards vaccination in ruminants

Keywords: Attitude, Tribal livestock owners, vaccination in ruminants, Scale product method.

Animal Husbandry and Dairy Development sectors play an important role in the national economy and in the socioeconomic development of the country as well as in supplementing family income and generating gainful employment in the rural sector, particularly among the landless labourers, small and marginal farmers and women, besides providing cheap nutritional food to millions of people. India has the world's largest livestock population accounting for over 55 and 16 per cent of the world's buffalo and cattle populations, respectively.

The XI Five Year Plan has included ambitious programs to increase the outlays for control of animal diseases. The present domestic animal health industry, which is of about Rs 1,000 crore, is only 4.5 per cent of the total estimated domestic pharmaceutical market. The control of animal disease is important for many reasons. Resistance to disease improves animal welfare, makes livestock farming more efficient (and food more plentiful) and helps protect people from those animal borne diseases capable of infecting humans too. In each of these cases even the most effective treatments would not achieve these ends as well as an effective vaccination programme can. However, the animal health has not received due attention in tribal areas that it deserves. To further evaluate attitude of tribal livestock owners towards vaccination in ruminants, the present investigation was carried out.

METHODOLOGY

In the present study attitude is conceptualized as positive or negative feelings of tribal livestock owners towards vaccination in ruminants. Scale product method' which combines the Thrustone's (1928)

technique of equal appearing interval scale, for selection of items and Likert's technique of summated rating (1932) for ascertaining the response on the scale as proposed by Eysenck and Crown (1949) was used.

Statement collection: In initial stage of developing the scale, 37 statements reflecting feelings of tribal livestock owners towards vaccination in ruminants were collected. The collected statements were edited according to the criteria laid down by Edward (1957). From the 37 statements, 25 statements were selected for judgment

Statement analysis: In order to judge the degree of "Unfavorableness" to "Favorableness" of each statement on five point equal appearing interval continuum i.e. strongly agree, agree, undecided, disagree, strongly disagree, a panel of 50 judges of social science group as well as expert of veterinary science was selected.

Determination of scale values: Based on judgment, the median value of the distribution and the Q value for the statement concerned were calculated with the help

$$S = L + \frac{0.50 - \sum P_b}{P_w} I$$

The inter-quartile range (Q = Q3 - Q1) for each statement was also worked out. Only those statements were selected whose median values were greater than Q value. When a few statements had the same scale values, the statements having lowest Q Values were selected. Thurstone and Chave (Edwards, 1957) described another criteria in addition to Q as a basis for rejecting statement in scales constructed by the method of the equal appearing interval. Accordingly when a few items had the same scale values, the item having lowest Q values were selected. The attitude scale thus constructed given in Table :1

Table 1

Based on the scale (median) and Q values out of 25 statements 14 statements were finally selected to constitute attitude scale (ALVR: Attitude of tribal livestock owners towards vaccination in ruminants)

Sr. No	Scale value	Q value	Final format of selected statements
1	3.69	2.43	I believe that adoption of vaccination practices is difficult for poor farmers. (-)
2	1.56	1.27	I think farmer should have awareness about vaccination. (+)
3	3.95	2.21	I believe that vaccination is difficult to adopt. (-)
4	1.30	0.97	I trust that vaccination is best way to prevent important diseases in cattle. (+)
5	4.97	2.54	I think vaccination is wastage of money. (-)
6	2.47	1.13	I believe that at any cost farmers should adopt vaccination to get many advantages. (-)
7	2.09	1.35	Adoption of vaccination in animals is an instrument to keep animals vigorous.(+)
8	1.89	0.73	I think that there is no risk in adoption of vaccination in animals. (+)
9	3.8	2.05	I think that vaccination is only educated farmers' custom. (-)
10	2.1	1.16	I feel that vaccination helps in prevention of spreading zoonotic diseases(+)
11	3.55	2.35	I understand that vaccination in animals is too costly to implement. (-)
12	2.8	1.97	I believe that there is more misinformation about vaccination in animals than reality. (-)
13	1.96	0.98	I think that progressive animal keeper is one who believes in vaccination practices. (+)
14	2.6	1.06	Comprehensive knowledge about vaccination is beyond the capacity of livestock owners. (-)

Scoring technique : Against each of 14 statements there were five columns, representing a five point continuum of agreement or disagreement to the statements as followed by Likert (1932). The points on continuum were strongly agree, agree, undecided, disagree and strongly disagree with a weightage score of 5, 4, 3, 2 and 1, respectively and scores are reversed for unfavorable or negative statement. To know level of attitude towards vaccination in ruminants, scores of each statement will be summed up.

Administration of the scale : The selected 14 statements for the final format of the attitude scale were randomly arranged to avoid response biases, which might contribute to low reliability and detract from validity of the scale. Out of the 14 selected statements, eight statements were the indicators of the unfavorable attitude and six statements were the indicators of favorable attitude. Against these 14 statements, there were five columns representing five points continuum of agreement and disagreement to the statements as followed by Likert (1932) in his summated rating technique of attitude measurement. The five points on continuum were strongly agree, agree, undecided, disagree and strongly disagree with respective weights of 5, 4, 3, 2, and 1 for the favorable statements and with the respective weights of 1, 2, 3, 4 and 5 for the

unfavorable statements. The weights of Likert's technique and the scale value of Thurston's technique were combined in the form of a product and the total score for an individual was the sum of the product.

Reliability of the scale : The split-half technique was used to measure the reliability of the scale. The 14 statements were divided into two equal halves with 7 odd numbered and 7 even numbered. These were administered to 20 non respondent livestock owners. Each of the two sets was treated as separate scales having obtained two score, for each of the 20 non respondents. Co-efficient of reliability between the two sets of scores was calculated by Rulon's formula (Guilford 1954). This was found to be 0.78. It means that the developed scale was found reliable.

Validity of the scale : The validity of the scale was examined for content validity by determining how well content were selected by discussing it with specialists, of extension and statisticians. Thus, the present scale satisfied the content validity.

RESULT AND DISCUSSION

The distribution of livestock owners on their attitude towards vaccination in ruminants is given in Table 2.

From the Table 2, it could be seen that among the

tribal livestock owners the data given in Table 2 illustrate that 63.33 per cent of the owners had moderately favorable attitude towards vaccination followed by 16.67 per cent and 8.34 per cent of them had less favorable and most favorable attitude towards

vaccination in ruminants, respectively. Only 6.66 per cent and 5.00 per cent of the livestock owners were observed to have least favorable and more favorable attitude towards vaccination in ruminants.

Table 2
Attitude of tribal livestock owners towards vaccination in ruminants

Sr. No.	Level of Attitude	Frequency	Per cent
1	Least favorable(14.00 to 25.20)	04	06.66
2	Less favorable (25.21 to 36.40)	10	16.67
3	Moderately favorable (36.41 to 47.60)	38	63.33
4	More favorable (47.61 to 58.80)	03	05.00
5	Most favorable (58.81 to 70.00)	05	08.34
Total		60	100.00

CONCLUSION

From the various methods available for constructing the attitude scale, scale product method' which combines the Thrustone's technique of equal appearing interval scale, for selection of items and Likert's technique of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown was used to measure the attitude of tribal livestock owners towards vaccination in ruminants.

The reliability and content validity of the fourteen statements were assessed. All these statements can be used in similar situations wherever applicable with necessary modification if required. The study revealed that majority (76.67 per cent) of the tribal livestock owners had moderately to most favorable attitude towards vaccination in ruminants.

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