AN OVERVIEW OF KNOWLEDGE LEVEL OF DAIRY FARMERS OF PUNJAB REGARDING GENITAL PROLAPSE CONDITION

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ABSTRACT

Genital prolapse is an obstacle in efficient reproductive management of dairy animals, thereby affecting efficient production. The current study was planned to overview the knowledge level of dairy farmers of Punjab regarding Genital prolapse condition in dairy animals. 300 dairy farmers visiting three different Veterinary institutions (100 from each group) of Punjab, {namely, Teaching Veterinary Clinical Complex (TVCC), Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana (Group I); Veterinary polyclinics (Group II) and Civil Veterinary Hospitals (CVH) (Group III)} were chosen by random selection method. The data was collected by Personal interview method. Majority of the dairy farmers belonged to middle and old age. Education level of most of the farmers was up to high school and were small farmers. Mass media exposure of majority of farmers were low to medium. Most of the dairy farmers of Group I (78 %), II (62 %) and III (56 %) had medium knowledge level regarding prolapse. While 18%, 38 % and 44 % of dairy farmers belonging to Group I, II and III respectively had high knowledge level. Only 4% farmers of Group I had low knowledge level. There was statistically significant difference (at P< 0.05) in knowledge score of Group I with Group II and Group III. The age of dairy farmers was found to be significantly negatively correlated with knowledge level of prolapse, while education level and training were found to be significantly positively correlated with knowledge level of prolapse at the 0.01 level (2-tailed). The current study points that there is need of organizing more extension programme in an effective manner by keeping in mind the place and various socio-personal and communication parameters of dairy farmers.

Keywords: Dairy, Farmer, Knowledge, Overview, Prolapse, Punjab

Punjab is a dairy prime state with highest average per capita milk availability (1181 g) in India (Basic Animal Husbandry Statistics 2019, GOI). Dairy farming is an important source of livelihood. Dairy farmers have invested huge amount of money in their farm and are toiling day and night to earn maximum profit from dairy farm. The production potential of a dairy animal is directly linked with reproductive performance. The reproductive diseases result in to remarkable economic loss to the dairy industry due to slower uterine involution, prolonged inter conception and calving interval, negative effect on fertility, drop in milk production and early depreciation of potentially useful cows (Corea *et al.*, 2001). Genital prolapse is a cumbersome field problem of dairy animals. It is the inside-out protrusion of one or more uro-genital organs such as bladder, uterus and vagina from their normal anatomical position, through the genital opening (Powell, 2007). It is regarded as an emergency condition, which should be managed immediately to avoid any further complications i.e. edema, trauma, contamination and fatal hemorrhage (Kumar *et al.*, 2018) leading to a grave prognosis (Miesner and Anderson, 2008). Keeping unproductive and reproductively unhealthy animals in herd always leads to loss at dairy farm. The farmers are educated about scientific practices with the help of various extension programmes such as training, demonstrations,

exhibitions, Pashu Palan Melas etc. For their catalytic effects, the extension equipment and services serve as the perfect link between academic research institutions and dairy farmers (Meena & Malik, 2009). However, the effective extension activities should be carried out after keeping in mind the knowledge level of dairy farmer, the place to which farmer belong and type of animal reared by them (Kasrija, 2016). The knowledge level of dairy farmers about reproductive disorders was reported to be not up to mark in the earlier studies (Ashoo *et al.*, 2020; Kasrija, 2016). So, an elaborative study including whole of Punjab state was planned to assess knowledge level of dairy farmers of Punjab regarding Genital prolapse condition.

MATERIALS AND METHODS

a)   Sampling plan and Sample size:

On the basis of geography, Punjab state is divided into three major regions namely Majha, Malwa and Doaba. This division of Punjab state is basically due to the rivers Satluj, Beas and Ravi flowing through the land of Punjab. In the historical times, it was not easy to cross the rivers and hence the areas divided by rivers were considered as separate regions (Anonymous, 2022). For treatment and consultancy of their animals, the dairy farmers of the state are mainly contacting three main Veterinary institutions namely- Teaching Veterinary Clinical Complex (TVCC),

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Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana; Veterinary polyclinics and Veterinary Hospitals (CVH). The present study was conducted on 300 dairy farmers of Punjab visiting these institutions. 100 dairy farmers visiting each institution were selected by Random selection method.

For more uniformity of data, the Veterinary Polyclinic and Civil Veterinary Hospitals (CVH) of three districts namely Amritsar (Majha region), Ludhiana (Malwa region), Jalandhar (Doaba region) were selected. These three districts (namely Ludhiana, Amritsar and Jalandhar) were selected in Malwa, Majha and Doaba regions respectively on the basis of maximum livestock (cattle and buffalo) population in these districts. So, the total sample size was 300 and the dairy farmers were categorized in to Group I (those who are visiting TVCC, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana), Group II (those who are visiting Veterinary Polyclinics) and Group III (those who are visiting CVH).

b)   Tools of Data collection and Observations to be recorded

The data was collected through personal interview method. The interview schedule was prepared after reading relevant literature, discussions with field extension workers, subject matter experts, and academicians. The original statement was chosen since it covered important topics and was tailored to the dairy farmers' knowledge and comprehension levels. A total of 11 questions/items related with prolapse (with maximum score of 11) were selected for interview schedule (Table 1). Farmers giving correct answer were awarded 'One' score and those who had given wrong answer were awarded 'Zero' score. The expected ideal response for most of the questions (Q1, Q 2, Q 4, Q5, Q6, Q7, Q8, Q9, Q10 and Q 11) was "yes" and for Q 3 the ideal response was "Old age". Dairy farmers were asked questions in a manner that they can't close the answers by just saying 'Yes "or 'No'. The dairy farmers were rewarded score after analyzing the situation and explanation given by the dairy farmer, while answering the question. The dairy farmers getting <3, 3-7 and >7 score were categorized in to low, medium and high knowledge score category respectively. After the interview, the dairy farmers were appraised about correct management and health practices for treating prolapse.

The age, education level, land holding and knowledge about training were recorded by direct questioning and by seeing documents. The mass media exposure of dairy farmer was calculated by asking the dairy farmers about exposure to mass media such as television, radio, newspaper, farm magazines, books, mobile and internet. Dairy farmers who had access to one media source received 'one score', while those who had no contact, received 'Zero score'. Therefore, a total of maximum score of 7 may be expected. The dairy farmers were further categorized in to three categories- Low level of mass media exposure (exposure to less than 3 mass media sources), Medium level of mass media exposure (exposure to 3 to 5 mass media sources) and High level of mass media exposure (exposure for more than 5 mass media sources).

c)   Statistical analysis: Then the collected data was tabulated with the help of Microsoft Excel and analyzed for frequency, percentage, Mean, ANOVA and correlation with the help of SPSS version 20.0.

RESULTS AND DISCUSSION

1.   Socio-personal and communication parameters of dairy farmers:

A perusal of Table 2 revealed that most of the dairy farmers belonging to Group I, II and III belonged to middle age and old age group category. It suggests that dairy farming in Punjab state is mostly done by mature persons above 30 year age. These findings have corroborated well with earlier studies of Patel et al. (2013) and Ahirwar et al. (2016) in Narmada valley of Gujarat and Rewa district of Madhya Pradesh respectively. Approximately 2/3rd of dairy farmers belonging to Group I, Group II and Group III were having education level up-to high school followed by $1/3^{rd}$ of dairy farmers with education level of higher secondary and above (upto 12th). Almost more than half were having small land holding. This finding is in line with Nilkanth et al. (2019), who reported that majority of dairy farmers (65.83%) were small farmers having land holding of 2.5-5 acres.

Almost half of the dairy farmers (51% in Group I, 43% in Group II, 52% in Group III) had low level of mass media exposure i.e. had contacted with less than 3 sources of mass media source. A little less than half of dairy farmers (49% in Group I, 50% in Group II, 46% in Group III) had medium level of mass media exposure. Only few farmers (none in Group I,7% in Group II, 2% in Group III) had high level of mass media exposure. So there is need to enhance mass media exposure of dairy farmers and to utilize the mass media sources efficiently for dissemination of latest knowledge to dairy farmer. However, in earlier studies by Raut (2009) and Meena et al. (2012), majority of respondents had medium level of mass media exposure.

Majority (70%) of dairy farmers had not acquired any kind of technical training from any of institution (from

Veterinary University, KVK and other agencies) regarding dairy farming in different groups (57% in Group I, 77% in Group II, 76% in Group III) while about 30 percent acquired training for dairy farming in different groups (43% in Group I, 23% in Group II, 24% in Group III).

2. Knowledge score of dairy farmers regarding Genital prolapse condition

From Table 1, it is inferred that majority (67.33%) of farmers were having knowledge about 'What type of condition is considered as a prolapse'. Still a large segment of population was unaware about prolapse. The awareness camps and instructional materials regarding these conditions should be provided to farmers so that every farmer should be able to identify the condition of prolapse. More than half of dairy farmers were not aware that feeding of excessive amount of straw is a predisposing cause of prolapse condition. So there is need of enhancing linkage between farmers and extension agencies so that farmers get the correct information about feeding and management to prevent the occurrence of prolapse. Majority (61%) of farmers informed that old age is most susceptible for occurrence of prolapse. In old age, there is weakening of uterine musculature due to which it can't hold the uterus in proper position and it may lead to prolapse condition. According to Bhatti *et al.* (2006) excessive relaxation of pelvic ligaments occur due to old age. More than half of dairy farmers were having knowledge that the fungal toxins in feed can lead to condition of prolapse. The nutrition experts should be linked with farmers so that they get proper information about formulation of feed and gather information about right ingredients to prevent feed from fungal toxins which ultimately decrease occurrence of many disorders. Many (54.33%) of the farmers were having knowledge regarding requirement of deworming to prevent occurrence of prolapse and rest 45.67 percent didn't know that improper deworming leads to prolapse condition. Worm load is major concern regarding the condition of prolapse and to prevent this worm load, farmers should be made aware about deworming by extension workers, Veterinary officers and by para-veterinarian. Proper deworming schedule and awareness about deworming at different phases of lactation should be provided to farmers to prevent occurrence of prolapse like conditions.

Sixty percent of farmers were aware that improper method of traction will lead to prolapse during handling of dystocia and rest 40 percent of farmers were unaware of it. So to prevent application of these improper traction techniques, dairy farmer should be made aware about it and there is need to encourage them to consult Veterinary specialist for dealing with peripartum complications. When animal was tied at same position for long time in a day then it will lead to weakness of muscles of animal which lead to occurrence of prolapse condition and 53 percent of farmers were unaware of this practice so they faced this condition, which lead to economic loss. However, Bhatti *et al.* (2006) reported that the occurrence of genital prolapse was higher in buffaloes kept under semi stall feeding system (14.07%) compared to those maintained under stall feeding (12.98%).

Most (68.33%) of the farmers were aware about the occurrence of uterine prolapse if vaginal prolapsed is left untreated. So there is need of proper and timely treatment of vaginal prolapse so as to prevent uterine prolapse. Majority (88.33%) of farmers were aware about the cautionary handling during dystocia when there was a vaginal prolapse. The rope truss method of handling the prolapse was so common that most (84%) of farmers knew about the rope truss method of handling of prolapse. Only 33 percent farmers were aware about the Buhner suture method of handling of prolapse, which they come to know from their fellow farmers.

3. Mean knowledge score (Mean± SEM) of and distribution of dairy farmers according to Genital prolapse condition

Table 3 represents the mean knowledge score of dairy farmers about prolapse. There was statistically significant difference (at P< 0.05) in knowledge score regarding prolapse of Group I with Group II and Group III, with highest knowledge score in Group III dairy farmers.

From Table 4, it is indicated that, majority of dairy farmers in all the three groups had medium level of knowledge regarding Genital prolapse. So, still there is need to strengthen the already existing extension infrastructure so that all the dairy farmers must have high knowledge about Genital prolapse.

1. Correlation analysis of Socio-personal and communication parameters with knowledge of prolapse

The age of dairy farmers under conducted study was found to be significantly negatively correlated with knowledge level of prolapse, at the 0.01 level (2-tailed), whereas there is significant positive correlation between education and training with knowledge about prolapse. There was non-significant positive correlation between land holding and mass media exposure with knowledge about prolapse condition (Table 5).

CONCLUSIONS

The present study indicated that dairy farming in

Table 1. Distribution of dairy farmers according to knowledge of Genital prolapse

S. No.	Parameters (Knowledge)	Category	Group I (n= 100)	Group II (n= 100)	Group III (n=100)	Total (n=300)
1.	Do you consider a mass hanging from vaginal or rectal region as a prolapse?	Yes	64(64.00)	66(66.00)	72(72.00)	202(67.33)
		No	36(36.00)	34(34.00)	28(28.00)	98(32.67)
2.	Are you aware about feeding a lot of straw leads to prolapse condition?	Yes	34(34.00)	54(54.00)	53(53.00)	141(47.00)
		No	66(66.00)	46(46.00)	47(47.00)	159(53.00)
3.	Which age is most susceptible for occurrence of prolapse?	Young age	14(14.00)	8(8.00)	12(12.00)	34(11.33)
		Middle age	20(20.00)	34(34.00)	29(29.00)	83(27.67)
		Old age	66(66.00)	58(58.00)	59(59.00)	183(61.00)
4.	Do you know that fungal toxins in feed can cause prolapse?	Yes	39(39.00)	65(65.00)	69(69.00)	173(57.67)
		No	61(61.00)	35(35.00)	31(31.00)	127(42.33)
5.	Do you know improper deworming leads to prolapse condition?	Yes	55(55.00)	51(51.00)	57(57.00)	163(54.33)
		No	45(45.00)	49(49.00)	43(43.00)	137(45.67)
6.	Are you aware improper method of traction while dystocia leads to prolapse?	Yes	51(51.00)	64(64.00)	65(65.00)	180(60.00)
		No	49(49.00)	36(36.00)	35(35.00)	120(40.00)
7.	Are you aware tying animal at same position for a long time responsible for prolapse?	Yes	46(46.00)	49(49.00)	46(46.00)	141(47.00)
		No	54(54.00)	51(51.00)	54(54.00)	159(53.00)
8.	Are you aware if vaginal prolapse left untreated will lead to uterine prolapse?	Yes	57(57.00)	73(73.00)	75(75.00)	205(68.33)
		No	43(43.00)	27(27.00)	25(25.00)	95(31.67)
9.	Are you aware if there is vaginal prolapse there should be cautionary handling while relieving dystocia?	Yes	84(84.00)	90(90.00)	91(91.00)	265(88.33)
		No	16(16.00)	10(10.00)	9(9.00)	35(11.67)
10.	Are you aware about Rope truss method of handling prolapse?	Yes	78(78.00)	87(87.00)	87(87.00)	252(84.00)
		No	22(22.00)	13(13.00)	13(13.00)	48(16.00)
11.	Are you aware about Buhner sutures method of handling prolapse?	Yes	30(30.00)	35(35.00)	34(34.00)	99(33.00)
		No	70(70.00)	65(65.00)	66(66.00)	201(67.00)

Figure in parenthesis indicate percentage

Table 2. Distribution of respondents according to socio-personal and communication parameters

Socio-personal characters	Category	Group I (n= 100)	Group II (n= 100)	Group III (n=100)	Total (n=300)
Age	Young Age (21-30 years)	16(16.00)	9(9.00)	7(7.00)	32 (10.67)
	Middle Age (31-40 years)	47(47.00)	45(45.00)	43(43.00)	135 (45.00)
	Old Age (>40 years)	37(37.00)	46(46.00)	50(50.00)	133 (43.33)
Educational qualifications	Illiterate (No formal education)	7(7.00)	1(1.00)	2(2.00)	10 (3.33)
	Upto high school (upto 10th)	66(66.00)	68(68.00)	60(60.00)	194 (64.67)
	Higher Secondary and above (upto 12th)	21(21.00)	24(24.00)	27(27.00)	72 (24.00)
	Graduation or above	6(6.00)	7(7.00)	11(11.00)	24 (8.00)
Land holding (Acre)	Landless (without land)	0 (0)	3(3.00)	1(1.00)	4 (1.33)
	Small (upto 10 acre)	73 (73.00)	61(61.00)	62(62.00)	196 (65.33)
	Medium (11-20 acre)	26 (26.00)	32 (32.00)	37 (37.00)	95 (31.67)
	Large (>20 acres)	1 (1.00)	4 (4.00)	0 (0)	5 (1.67)
Mass media exposure	Low (contacted < 3 sources)	51(51.00)	43(43.00)	52(52.00)	146 (48.67)
	Medium (contacted 3-5 sources)	49(49.00)	50(50.00)	46(46.00)	145 (48.33)
	High (contacted > 5 sources)	0(0)	7(7.00)	2(2.00)	9 (3.00)
Training	Yes	43(43.00)	23(23.00)	24(24.00)	90(30.00)
	No	57(57.00)	77(77.00)	76(76.00)	210(70.00)

Table 3. Mean knowledge score (Mean± SEM) of dairy farmers about prolapse

Knowledge score about prolapse (Mean Score ± S.E)		
Group I (n= 100)	Group II (n= 100)	Group III (n=100)
6.04 ± 0.18^a	6.92 ± 0.19^b	7.08 ± 0.19^b

Means in rows with different superscript are significant at P< 0.05

Table 4. Distribution of dairy farmers according to knowledge level score regarding prolapse

S. No.	Knowledge level	Group I (n= 100)	Group II (n= 100)	Group III (n= 100)
1.	Low (< 3)	4 (4.00)	0 (0.00)	0 (0.00)
2.	Medium (3-7)	78 (78.00)	62 (62.00)	56 (56.00)
3.	High (> 7)	18 (18.00)	38 (38.00)	44 (44.00)

Figure in parenthesis indicate percentage

Punjab is practiced mostly by mature dairy farmers with small land holding. There is significant difference in knowledge level of dairy farmers (about genital prolapse in dairy animals), who are visiting different Veterinary institutions and knowledge level mostly fall in to medium knowledge category. So, more extension programme for knowledge enhancement should be formulated keeping in view the place and socio-personal characteristics of dairy farmers.

Table 5. Pearson's Correlation coefficient 'r' value of Socio-personal and communication parameters with knowledge of prolapse

Pearson's correlation coefficient 'r'	Socio-personal and communication parameters				
	Age	Education	Land Holding	Mass Media Exposure	Training
Knowledge about Genital prolapse	-0.317**	0.201**	0.046	0.073	0.151**

(**) Correlation is significant at the 0.01 level (2-tailed).

REFERENCES

Ahirwar, M.K., Singh, H.S., Patel, R.K. and Mondal, M.K. (2016). Socio-personal and economic profile of peri-urban and rural dairy farmers in Rewa District of Madhya Pradesh. *Int. J. Agric. Sci.* **8(63)**: 35483551.

Anonymous (2022). Punjab data -know everything about Punjab Majha Malwa Doaba retrived from https://www.punjabdata.com/Majha-Malwa-Doaba.aspx

Ashoo, Verma, H.C., Singh, R.K., Kumar, R., Ramakant and Diwakar, R.P. (2020). Knowledge of dairy farmers and incidence rate of reproductive disorder in dairy animal under field condition in eastern plain zone of Uttar Pradesh, India. *J. Entomol. Zool.* **8(2)**: 1352-1356.

Bhatti, M.S., Ahmad, I., Ahmad, N., Lodhi, L.A. and Ahmad, M. (2006). Epidemiological survey of genital prolapse in buffaloes kept under different systems and serum micro mineral contents. *Pak. Vet. J.* **26(4)**: 197.

Correa, M.T., Curtis, C.R., Erb, H.M., Screlett, J.M. and Smith, R.D. (2001). An ecological analysis of risk factors for postpartum disorders of Holstein-Friesian cows from thirty-two New York farms. *J. Dairy Sci.* **73(6)**: 1515-1524.

Kasrija, R. (2016). Effectiveness of instructional material designed on the basis of felt needs of the Dairy farmers of Punjab regarding common reproductive conditions, PhD. Dissertation, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana.

Kumar, A., Saxena, A., Anand, M. and Upmanyu, G. (2018). Genital prolapse in bovine and its management. *Int. J. Environ. Sci. Technol.* **7(4)**: 1435-1439.

Meena, M.S. and Malik, B.S. (2009). Participatory identification of reproductive problems among dairy animals and constraints faced by farmers in Haryana. *Indian J. Anim. Sci.* **79(11)**: 1172-1175.

Meena, M.S., Singh, K.M., Malik, B., Meena, B. and Kanwat, M. (2012). Knowledge index for measuring knowledge and adopting scientific methods in treatment of reproductive problems of dairy animals. *J. Agric. Sci.* **4(10)**: 81-88.

Miesner, M.D. and Anderson, D.E. (2008). Management of uterine and vaginal prolapse in the bovine. *Vet. Clin. North Am. Food Anim. Pract.* **24**: 409-419. https://doi.org/10.1016/j.cvfa.2008.02.008

Nilkanth, V., Bhanotra, A.K., Manish, S., Yankam, S.R. and Ghatare, A. (2019). Socio-personal and economic profile of ITK practicing dairy farmers in Palghar district of Maharashtra. *Int. J. Farm Sci.* **9(4)**: 15-19.

Patel, N.B., Singh, R.R., Saiyed, L.H., Sabapara, G.P., Rao, T.K.S. and Modi, R.J. (2013). Status and constraints of dairying in the tribal households of Narmada Valley of Gujarat, India. *Anim. Sci. Report.* **7(3)**: 83-89.

Powell, J. (2007). Reproductive prolapses of cattle. Livestock health series, University of Arkansas. 1-2.

Raut, A.A. (2009). Retrospect and prospects of commercial dairy farming in Maharashtra. Ph.D. Thesis National Dairy Research Institute, Karnal.