ANALYSIS OF THE TRAINING NEEDS OF VETERINARY SURGEONS OF KERALA FOR CONTINUING VETERINARY EDUCATION

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THESIS

Submitted in partial fulfilment of the requirement for the degree

Master Of Veterinary Science

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DECLARATION

I hereby declare that the thesis entitled **"ANALYSIS OF THE TRAINING NEEDS OF VETERINARY SURGEONS OF KERALA FOR CONTINUING VETERINARY EDUCATION"** is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

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CERTIFICATE

Certified that the thesis entitled **"ANALYSIS OF THE TRAINING NEEDS OF VETERINARY SURGEONS OF KERALA FOR CONTINUING VETERINARY EDUCATION"** is a record of research work done independently by **Shri. K.M. Sakthivel,** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

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Elation of a mother hearing others praise her children is greater than the pleasure of begetting them

thiruvalluvar

DEDICATED

IN THE LOVING MEMORY OF
MY FATHER
AND
TO MY BELOVED MOTHER

the throb of life is in love; in its absence
the body is bundle of bones and skin

thiruvalluvar

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K.M. Sakthivel

ABBREVIATIONS

AHD	-	Animal Husbandry Department
CVE	-	Continuing Veterinary Education
IMG	-	Institute of Management in Government
KAU	-	Kerala Agricultural University
KLDB	-	Kerala Livestock Development Board
IVRI	-	Indian Veterinary Research Institute
VCI	-	Veterinary Council of India

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Introduction

1. INTRODUCTION

The efficiency with which the veterinarians of the state discharge their duties has its direct impact on the animal health, animal production and the economy of the state. The veterinary surgeons should keep themselves abreast of the latest advancements in veterinary and animal husbandry to function as successful extension/ development workers and to discharge their duties pertaining to animal disease control and animal production efficiently. Like in many other fields of science rapid advancement in scientific application is taking place in veterinary and animal husbandry also. This has very much necessitated the veterinary surgeons to update their professional knowledge and skills. This is best possible through an effective continuing veterinary education (CVE) programme. The Veterinary Council of India too had emphasised the need for introduction of CVE programme in every state.

According to the report of the Joint Royal College of Veterinary Surgeons/ British Veterinary Association Working Party (1984) continuing veterinary education is a process by which the veterinary surgeons keep up-to-date with advances in their fields as well as maintaining and enhancing their competence. Singh and Satpathy (1999) observed that continuing education is the process by

which the professional personnel (single, in groups or in institutional setting) purposefully improve themselves or their profession by enhancing their knowledge, attitude and skills. They also opined that continuing education courses for professionals may be of two types. Formal courses such as summer schools, short term courses, refresher courses, in service training, etc., under the purview of formal method of imparting continuing education. This method facilitates direct contact between the experts and the participants in the house. Seminars and conferences, professional literature, professional meetings, letters, study circles, workshops and exhibition are some of the informal methods of imparting continuing education to professionals. For keeping track with the new developments in the field it is essential that professionals meet periodically and share their professional knowledge and experience.

Imparting of continuing veterinary education can be achieved through an effective and need based training. Task analysis can be one of the effective methods to ascertain the training needs. Unfortunately the training programmes that have been organised are not based on sound analysis of the job. A training programme based on trainee's needs and task analysis would make the basic purpose of training meaningful. Studies on the training needs of veterinary surgeons under the continuing veterinary education programme vis-à-vis task analysis have been conspicuous by their absence. Since continuing veterinary education is being increasingly emphasized by

various veterinarian's organisations and even Veterinary Council of India, it is felt by all concerned that it is high time to know the training needs as well as the strategies to be adopted to help in organizing sound CVE training programmes.

In view of the aforesaid facts the present study was conducted with the objective of identifying the training needs of veterinary surgeons of Kerala for the continuing veterinary education.

Review of Literature

2. REVIEW OF LITERATURE

Studies on continuing veterinary education have been conspicuous by their absence. Studies on the training needs of the veterinarians as well as the training strategies to be followed were nevertheless a few. Infact, enquiries into training needs and training strategies to be followed began with those of village level workers, agricultural officers etc., than with Veterinary Extension personnel. In this chapter, therefore, all such pertinent studies are incorporated.

2.1 Concept of continuing education

According to the report of the Joint Royal College of Veterinary Surgeons/ British Veterinary Association Working Party (1984) continuing veterinary education is a process by which veterinary surgeon keep up-to-date with advances in their fields as well as maintaining and increasing their competence.

Chakraborti (1999) stated that continuing education courses could be short term diploma/ certificate courses for those who had the benefit of university education but need to return to the university for updating knowledge or skills or acquiring new skills.

Singh and Satpathy (1999) observed that continuing education is the process by which the professional personnel (single, in groups or in institutional setting) purposefully improve themselves or their profession by enhancing their knowledge, attitude and skills. They also opined that continuing education courses for professionals may be of two types. Formal courses such as summer schools, short term courses, refresher courses, in-service training, etc., which come under the purview of formal methods of imparting continuing education. This method facilitates direct contact between the experts and participants in the house. Seminars and conferences, professional literature, professional meetings, letters, study circles, workshops, exhibitionsare some of the informal methods of imparting continuing education programme to professionals. For keeping track with the new developments in the field it is essential that professionals meet periodically.

2.2 Concept of training

Training has been defined variously by different authors.

Miles (1959) conceptualised training as a change inducing temporary system.

Hall (1962) described training as the process of aiding employees to gain effectiveness in their present or future work

through the development of appropriate habits of thought and action, skills, knowledge and attitudes.

Rudramoorthy (1964) defined training as a means to bring improvement in the quality of work performed by the staff and individuals. The concept was further explained as that it should equip the worker with necessary knowledge and skills or abilities and attitudes to reach his goal efficiently.

Collings (1966) elaborated training as the instruction and other learning experiences, which purport to fit the worker into the service so that he competently meets the demands of his job, as determined by changing leadership needs of people.

Flippo (1966) described training as the act of increasing the knowledge and skill of an employee for doing a particular job.

Craig and Bittel (1967) defined training as an essential input in management efforts to improve overall performance of the enterprise.

According to Lynton and Pareek (1967), training is primarily concerned with preparing the participants for certain lines of action which are delineated by technology and the organisation in which he works. The focus in training is on internalising the skills

for action by giving opportunities to participants to practise the new skills in situations resembling the complexities of real life.

Bennis (1969) conceived training as a small group effort designed to make the participants more aware of themselves and of group process. The group works under the guidance of a professionally competent behavioural scientist and explores group processes and development by focussing attention on the experienced behaviour of its members.

Littlefield *et al.* (1971) elaborated training as a continuous, systematic development among all levels of employees of that knowledge and those skills and attitudes which would contribute to their welfare and that of the company.

Peter (1972) observed that training is learning job which is a socialisation process by which the individual acquires knowledge, attitudes and skills to meet the expectation of those who influence his behaviour.

Havelock and Havelock (1973) described training as a means to a more immediate end, namely creating a cadre of professionals with a new set of skills. It was assumed that those persons after acquiring the needed skills, would be able to effect further change in a large sphere.

Coombs and Ahmed (1974) envisaged that training emphasises a more systematic and deeper learning of specific skills and related knowledge.

Jucius (1975) stated that training is used to indicate any process that would increase the aptitudes, skills and abilities of employees to perform specific jobs.

According to Rao (1975), training is a kind of learning process where a selected group of individuals undergo learning experiences to internalise skills, resulting in modification of behaviour towards job performance.

Armstrong (1977) defined training as a systematic development of the knowledge, skills and attitudes required by an individual to perform adequately a given task or job. According to him, training would involve learning of various kinds and in various situations.

Aslam (1979) views training for skill development as an attempt to bridge the gap between the existing skill and the new technology on the one side and develop skill among the unskilled on the other side.

Dahama and Bhatnagar (1980) stated that training aims at educating a person so as to be fitted, qualified and proficient in doing some job. For an extension worker, training included education, which aimed at bringing a desirable change in the behaviour of the trainee or learner.

Kamat (1983) defined training as the process of helping personnel in an organisation to acquire knowledge, skill and attitude for new and better ways of behaviour needed by an organisation.

2.3 Importance of training for extension personnel

Planty (1948) pointed out that the aim of the training is to build continuously and systematically to the maximum degree and in proper proportions, the skill and attitude which contribute to the welfare of the organisation and employee.

Dayal (1966) stated that training would make a man perfect. It would enable him to do his job efficiently, smoothly and quickly with great confidence and concentration.

Ramakrishnan (1968) opined that the training of people engaged in agriculture and community development programme aims to communicating information, knowledge and skills, replacing old attitude by new ones, exchanging opinion and experience, removing doubts and difficulties and creating a desire to change. To be

effective, training should be planned in advance. The content and method should suit to the level of intelligence, education and understanding of the trainees and should take into account the local needs and problems and their applicability of new techniques and solutions to the local situations.

Rao (1984) stated that training was aimed at giving the functionaries a sense of purpose, to promote extensive and broad-based development of initiative amongst beneficiaries and to generate self-confidence and belief in the efficiency and self-help. It was also expected to equip the workers with the capability to find solutions to the problems.

According to Reddy (1984), training is the organised procedure by which people acquire knowledge and/ or skill for a definite purpose. The objective of training is to bring about change in the behaviour of the trained. It means that the trainees should acquire new skills, technical knowledge and problem-solving ability. It is expected that the trainees will apply their newly acquired knowledge and skill on the job in such a way to facilitate the achievement of organisational goal.

2.4 Subject matter areas of training

Singh (1965) reported that agricultural extension officers required competencies in the following areas

i) Programme planning

ii) Communication

iii) Understanding of social system

iv) Educational process and extension methods

v) Evaluation and reporting

vi) Organisation and administration

Suryanarayana murthy (1965) reported that agricultural extension officers expressed need for training in office management, accounting and extension methods.

The subject matter areas for in-service training of Animal Husbandry Extension Officers as expressed by Sharma and Singh (1968) were

i) Surgery: anaesthesia, stringhalt, cancerous horn, rumenotomy, teat and udder surgery, lameness, bone fractures and vesicular lithotomy

ii) Gynaecology: Caesarean section, vasectomy, prolapse of vagina, dystocia and overiotomy

iii) Pathology: Autopsy procedures and methods of despatching diagnostic material

Halim and Islam (1973)in their study on attitude of the Front Line Extension Workers towards in-service training

programmes found that most of the field level extension workers preferred technical subject matter and extension teaching methods for training.

According to Mani (1974), the deputy agricultural officers preferred training in the following areas among others.

i) Office administration and supervision

ii) Extension methods and communication process

iii) Programme planning and evaluation

iv) Extension methods.

According to Krishnaraj (1975) the subject matter areas preferred for training by veterinary surgeons were

i) Surgery including radiology and obstetrics and gynaecology under veterinary science

ii) Programme planning and evaluation, community development, adult education and adoption process, extension methods and communication process under extension

Dubey *et al.* (1977) in their study on in-service training needs of stockmen as perceived by them and their supervisors observed that both the stockmen and supervisors assigned first and

second priorities to animal breeding and disease control respectively. Economics of milk production and marketing was ranked last.

According to Sandhu and Bilang (1977) there was a need for in-service training for agricultural extension officers to make their knowledge adequate particularly in the areas of organisational services and programme planning.

Under extension, the important areas preferred by agricultural officers for training were extension education, extension methods and communication process, programme planning and evaluation as stated by Rajendran (1978).

According to the reports of Devindra and Aditya (1986) theagricultural officers the following subject matter areas for training:

i) Communication process of agricultural technology
ii) Preparation of script for radio broadcast
iii) Organising field trips
iv) Determining training needs of farmers
v) Monitoring and evaluation of farmer's training

Naik (1982) reported that assistant agricultural officers of Karnataka needed training in the areas of extension administration and supervision, agricultural extension, office rules and procedures, extension communication and programme planning.

Programme development, administration and management, communication and extension methods were the preferred areas for training by the District agricultural development officers in Nepal as reported by Shrestha (1983).

Dixit and Narwal (1991) reported that the following subject matter areas were preferred for training by animal scientists operating under National Agricultural Research Project to be the following,

i) Role of minerals in feeding of buffaloes
ii) Comparative nutritive values of treated and untreated fodders
iii) Importance of microbial protein synthesis in the rumen
iv) Production performance of elite herd
v) Heifers at organized farms for optimum production

The training needs of agricultural extension officers in the domain of extension knowledge on subjects like planning, preparation, evaluation and use of audio-visual aids, methods of training, principles of motivation, agricultural credit and credit institutions were reported by Subbiah and Raju (1994).

Mani (1996) reported that agricultural officers needed knowledge in management, administration and supervision,

programme planning, project formulation, monitoring and evaluation, and extension teaching methods under extension.

Sudeep kumar (1999) reported that majority of veterinary assistant surgeons perceived high training need in surgery, followed by clinical medicine and obstetrics and gynaecology in clinical aspects and diagnosis and treatment of infertility cases and frozen semen techniques in animal breeding aspects.

2.5 Trainers

Shrestha (1983) reported that 43 percentage of district agricultural development officers in Nepal suggested to invite the instructors for training from foreign countries.

2.6 Duration and periodicity of training

On an average, village level workers should be given 25 days in-service training after every year as reported by Gill (1966).

Sharma and Singh (1968) revealed that majority of animal husbandry extension officers preferred three months duration for in-service training.

Singh (1970) stated that the agricultural extension officers preferred one week, two weeks and two months duration of training as and when they completed two years, three years and more years of service respectively.

Sundarajan (1970) stated that majority of agricultural extension officers preferred 45 days duration for in-service training.

According to Halim and Islam (1973) the first line extension workers preferred to attend one month training programmes.

Jati and Dash (1974) reported that agricultural extension officers preferred to have training of two-months duration at an internal of two to three years.

Krishnaraj (1975) observed that veterinary assistant surgeons preferred two months as the optimum training period for in-service training.

Menon and Annamalai (1975) reported that majority of village level workers wanted in-service training to be conducted once in two years for a period of one to two months.

Naik (1982) reported that assistant agricultural officers preferred less than one-week duration for in-service training at an interval of a fortnight.

Shrestha (1983) reported that district agricultural development officers in Nepal preferred duration of 15-20 days for in-service training.

Gharu (1989) reported that majority of horticulture inspectors preferred duration of 10 days at an interval of one year for in-service training.

Kaur and Singh (1990) reported that extension workers preferred duration of 15 days for in-service training.

Jacob (1991) stated that functionaries of integrated rural development project preferred a duration of 45 days for training.

Mani (1996) reported that agricultural officers preferred five days as the duration of in-service training.

2.7 Venue of training

Singh (1970) found that agricultural extension officers preferred agricultural college, extension training centre, regional

head quarters and block head quarters as the venue for the in-service training.

Jati and Dash (1974) reported that agricultural extension officers preferred agricultural college and research institutes as the suitable location for the in-service training programme.

Menon and Annamalai (1975) reported that majority of the village level workers studied preferred for in-service training either agricultural college or rural extension training centre.

Naik (1982) reported that the in-service training venues preferred the most by assistant agriculture officers were agriculture college and block head quarters.

Siva (1994) reported that agricultural colleges and regional research stations were the most preferred venues for in-service training where as the state level training institute was preferred the least.

Mani (1996) reported that Tamil Nadu Agricultural University was preferred the most as the venue for in-service training by the agricultural officers.

2.8 Association between training needs and the socio-psychological characteristics

2.8.1 Age

Krishnaraj (1975) reported that the age of the veterinary surgeons was negatively correlated with their in-service training needs.

Rajendran (1978) from his study revealed that there was no correlation between age and the training needs of extension officers working under small farmers development agency.

Shrestha (1983) reported that there was no correlation between the age and expressed training needs of district agricultural development officers in Nepal.

Gharu (1989) reported that there was no significant relationship between the age of the horticultural inspectors and their expressed training needs.

Mani (1996) reported that the age of the agricultural officers was negatively and significantly correlated with their knowledge based training needs.

2.8.2 Educational qualification

Rajendran (1978) reported that there was no significant relationship between educational qualification and the training need of extension workers working under the small farmers development agency.

Shrestha (1983) found that the academic qualification of the district agricultural development officers of Nepal was not significantly associated with their expressed training needs.

Gharu (1989) reported that the level of education of the horticultural inspectors was significantly associated with their in-service training needs.

Mani (1996) reported that there was no significant relationship between the age of the agricultural officers and their in-service training needs.

Ravi (1991) reported that educational qualification of agricultural officers had shown significant relationship with their knowledge gain through the in-service training programmes.

2.8.3 Marital Status

Rajendran (1978) reported that there was a negative and non-significant relationship between marital status and the training needs of village level extension workers.

Mani (1996) reported that there was no significant association between the marital status of the agricultural officers and their expressed training needs.

2.8.4 Experience

Sharma (1966) in his study on the felt needs of animal husbandry extension officers of Punjab found that the relationship between length of service and training needs was not significant.

Krishnaraj (1975) reported a negative correlation was observed between the experience of the veterinary assistant surgeons and their in-service training needs.

Rajendran (1978) reported that experience had a positive and significant relationship with the training needs of village level extension workers.

Gharu (1989) reported that there was no significant relationship between the service experience of the horticultural inspectors and their expressed training needs.

Shrestha (1983) found that service experience had positive and significant correlation with the training needs of district agricultural development officers in Nepal.

2.8.6 Training underwent

Rajendran (1978) found that there was no correlation between the number of trainings underwent and the training needs of village level extension workers.

Shrestha (1983) reported that there was no significant association between the previous training underwent and the expressed training needs of district agricultural development officers of Nepal.

Gharu (1989) reported that pervious in-service training exposure was not significantly associated with the training needs of Horticultural Inspectors.

According to Ravi (1991) there was positive and significant relationship between the number of trainings underwent

and the knowledge gained through in-service training by the agricultural extension officers.

Kalita and Sarmah (1999) found that there was significant relationship between the previous training exposure and the training needs of village level extension workers.

Sudeep kumar (1999) reported that majority of the veterinary assistant surgeons had undergone one or more training during their career.

2.8.7 Exposure to journals

Sudeep kumar (1999) reported that almost all (97.50 per cent) the veterinary assistant surgeons read at least one journal or magazine to enrich their professional knowledge.

Methodology

3. METHODOLOGY

The methodology of this research study is presented under the following headings.

3.1 Sampling procedure and data collection

3.2 Selection of variables

3.3 Operationalization and measurement of variables

3.4 Statistical tools

3.1 Sampling procedure and data collection

A purposive sampling procedure was adopted for this study. Questionnaires were either sent by post or distributed in person during district level conferences to all the 764 veterinary surgeons of the state. One hundred and thirty veterinary surgeons returned the filled in questionnaires within the stipulated period of one month. Hence the sample of the study comprised of 130 veterinary surgeons. They consisted of forty-three from northern Kerala comprising of Kasargod, Kannur, Kozhikode, Palakkad, Wyanad and Malappuram districts, forty four from central Kerala comprising of Thrissur, Ernakulam, Kottayam, Idukki and Alappuzha districts and forty three from southern Kerala comprising of Pathanamthitta, Thiruvananthapuram and Kollam districts.

3.2 Selection of variables

The following variables were selected for the study

i) Personal profile (Independent variables)

1. Age
2. Gender
3. Marital status
4. Number of children
5. Age of the youngest child
6. Type of family
7. Educational qualification
8. Professional experience
9. Location of house
10. Distance to work place
11. Number of seminars, symposia, conferences attended
12. Training's underwent
13. Exposure to professional journals
14. Exposure to periodicals

ii) Relevancy rating of training programmes

iii) Task analysis

iv) Training needs in subject matter areas (Dependent variable)

1. Veterinary medicine
2. Surgery

3. Obstetrics and gynaecology
4. Animal production
5. Livestock products technology
6. Zoo and wild life
7. Extension
8. Professional management
9. Information technology

V. Training strategy

1. Type of training
2. Duration of training
3. Periodicity of training
4. Venue
5. Trainers
6. Mode of training
7. Preference for specialisation

3.3 Operationalization and measurement of variables

3.3.1 Age

It was operationalised as the age of the respondents at the time of study in years and the respondents were arbitrarily classified into three categories.

Category	age groups
1	$\leq$ 30 years
2	31-35 years
3	$\geq$ 36 years

3.3.2 Gender

Both genders were studied and scores of two and one were assigned to the male and female respondents respectively.

Category	Score
Female	1
Male	2

3.3.3 Marital status

It was operationalised as the state of respondents, whether they were married or unmarried at the time of the study and the scores were given as follows

Category	Score
Unmarried	1
Married	2

3.3.4 Number of children

It was operationalised as the total number of children the respondent had at the time of study.

3.3.5 Age of the youngest child

It was operationalised as the number of completed years and months of the youngest child of the respondent at the

time of study. It is usually at the age of three years that the children are admitted to crèche. Therefore, this age was taken as the criterion for categorizing the respondents. Based on this two categories were drawn and the scores were assigned as follows

Category	Score
Less than three years	1
More than three years	2

3.3.6 Type of family

It referred to the type of the family that the respondents where from, joint or nuclear family. The following scores were assigned to these categories.

Category	Score
Nuclear family	1
Joint family	2

3.3.7 Educational Qualification

This was operationalised as the possession of a professional degree by the respondents. The following categorisation was done based on the possession of bachelor's degree, additional qualification and master's degree. The scores were assigned as follows.

Category	Score
Graduate	1
Graduate holding additional diploma or certificate	2
Post graduate	3

3.3.8 Professional Experience

It referred to the total years of service completed by the respondent in the animal husbandry department at the time of investigation. Based on the professional experience the following categories were made

Category	Score
1	$\leq$ 5 years
2	6-10 years
3	$\geq$ 11 years

3.3.9 Location of house

It referred to the location of the house of the respondent in the district in which they were working at the time of the study. The scores were assigned to different categories as follows

Location of house	Score
Faraway district	1
Nearby district	2
Native district	3

3.3.10 Distance to work place

It referred to the distance between the residence of the respondent and their actual place of work. It was recorded in kilometres. Based on the distance to workplace respondents were categorised in to three

Category	Distance to work place
1	$\leq$ 50 kms
2	51-100 kms
3	$\geq$ 101 kms

3.3.11 Number of seminars, symposia and conferences attended

This was operationalised as the number of seminars, symposia and conferences attended by the respondents from January to December during the calendar year 2000. It was measured in terms of the number of items attended and based on this two arbitrary categories were drawn.

Category	Number attended
1	$\leq$ 5
2	> 5

3.3.12 Exposure to professional journals

It referred to the number of professional journals read by the respondents. It was measured in terms of the number of professional journals read and based on this two arbitrary categories were drawn.

Category	Number read
1	≤ 3
2	>3

3.3.13 Exposure to periodicals

It referred to the number of periodicals read by the respondents. It was measured in terms of the number of periodicals read and based on this two arbitrary categories were drawn.

Category	Number read
1	≤ 3
2	>3

3.3.14 Training underwent

This was operationalised as the number of trainings attended by the respondents ever since entering into service. It was measured in terms of the number of trainings attended and

based on the number of trainings attended three arbitrary categories were drawn.

Category	Number attended
1	None
2	≤5
3	>5

3.3.15 Training need

This referred to the subject matter areas in which veterinary surgeons needed training. After consulting with the experts, relevant subject matter areas were identified. The respondents were asked to indicate the requirements of a knowledge based as well as a skill based training on a three point continuum viz., required, somewhat required and not required with corresponding weightages of three, two and one.

The scores of all the respondents for a subject matter area under a domain were added. This total score was divided by the number of respondents. The resultant figure was the mean score. Thus the mean scores were calculated for all the subject matter areas under each domain. Based on the mean score values the subject matter areas under each domain were ranked.

$$\text{Mean score of a subject matter area} = \frac{\text{Total score}}{\text{No. of respondents}}$$

3.3.16 Mode of training

Mode of training referred to modes such as distance learning (correspondences, website, etc.),institutional (face to face) and integrated. The respondents were asked to indicate their preferred mode of training for each of the nine major domains.

3.3.17 Duration of training

Duration referred to the number of days or months the respondents preferred to undergo training.

3.3.18 Periodicity of training

Periodicity referred to the time interval the respondent's preferred in-between two training programmes.

3.3.19 Venue of training

It refers to the institutes in which the respondents prefer to undergo training. The institutes are grouped as the institutes of KAU, institutes within Kerala other than KAU and premier institutes outside Kerala. The respondents were asked to indicate their preference for venues for a short term training

programme of two to four weeks duration and for a long term training programme of eight to twelve weeks duration.

3.3.20 Trainers

It refers to the subject matter experts preferred by the respondents for imparting training. The subject matter experts are grouped as experts from the organisation (AHD), experts from outside the organisation but with in the state and experts from outside the state. The respondents were asked to indicate the trainers preferred the most by them for the different major subject matter areas.

3.3.21 Preference for specialisation

It refers to the subject matter areas in which respondent's desires to get specialised. The respondents asked to indicate the subject matter areas preferred the most by them for specialisation.

3.3.22 Relevancy rating of the training programmes

A list of the training programmes conducted by various training institutions from 1997 and attended by the veterinary surgeons of Animal Husbandry Department, Kerala were collected

from the Directorate of Animal Husbandry, Thiruvananthapuram. The list of CVE programmes proposed by the Veterinary Council of India comprising of skilled/ specific technology courses of 8-12 weeks duration and short courses of technical competence development programme of two to four weeks duration were also prepared. The respondents were asked to indicate the relevancy of the training programmes organised by various institutions and CVE programmes proposed by Veterinary Council of India on a four-point continuum, viz., highly relevant, relevant, some what relevant and not relevant with corresponding weightages of four, three, two and one.

The score of each item for all the respondents were summed up and divided by the number of respondents. This gave the mean score. The mean score for each item was converted into percentage mean score. This was done by taking the maximum score attainable for any single item as denominator and the corresponding mean score of that particular item as numerator and multiplying the ratio by 100.

$$\text{Item mean score} = \frac{\text{Total score}}{\text{No. of respondents}}$$

$$\text{Percentage mean score} = \frac{\text{Item mean score}}{\text{Maximum attainable score}} \times 100$$

Based on the percentage mean scores, the training programmes were arbitrarily classified into four categories as follows.

Category	Percentage mean score
Highly relevant	> 80
Relevant	60-80
Somewhat relevant	40-60
Not relevant	< 40

3.3.23 Task analysis

Task analysis referred to the analysis of the tasks performed by the veterinary surgeons in terms of their frequency of performance, relative importance and performance difficulty. In the present study tasks related to medicine, surgery, obstetrics and gynaecology and laboratory diagnosis were only analysed.

3.3.23.1 Frequency of Performance

It referred to how often each task was performed by the respondent. The scoring procedure adopted was as follows.

Category	Score
Daily	5
Daily to weekly	4
Weekly to monthly	3
Occasionally	2
Seldom/ never	1

3.3.23.2 Relative importance

It referred to the respondent's perception of the importance of each task. The scoring procedure adopted was as follows

Category	Score
Extremely important	3
Moderately important	2
Marginally important	1

3.3.23.3 Performance/ learning difficulty

It referred to the degree of difficulty while performing/ learning tasks as perceived by the respondent. The scoring was as follows

Category	Score
Very difficult	4
Difficult	3
Moderately difficult	2
Easy	1

3.4 Statistical tools

Simple mathematical calculations like arithmetic mean, frequencies and percentages and statistical tools like correlation were used to analyse the data.

Results

4.RESULTS

The results of the study are presented under the following headings.

4.1. Personal profile

4.2. Training needs

4.3. Relevancy rating of the training programmes of KAU, KLDB, IVRI and IMG

4.4. Relevancy rating of the CVE programmes proposed by VCI

4.5. Preferred trainers, periodicity and duration of CVE programmes

4.6. Preferred subject matter areas for specialisation

4.7. Preferred mode of training and venue of training

4.8. Task analysis

4.1 Personal profile

4.1.1 Age

Table 1. Distribution of respondents based on age

n=130

Sl. No	Age	Frequency	Percentage
1.	$\leq$ 30 years	37	28.46
2.	31-35 years	81	62.31
3.	$\geq$ 36years	12	9.23
	Total	130	100.00

It is evident from Table 1 that the age of most of the respondents (62.31 per cent) were between 31 and 35 years. Those of 30 years of age and below 30 years were 28.46 per cent and those above 36 years of age and of 36 years were 9.23 per cent.

4.1.2 Gender

Table 2. Distribution of respondents based on gender

n=130

Sl. No	Gender	Frequency	Percentage
1.	Gents	99	76.15
2.	Ladies	31	23.85
	Total	130	100.00

It is evident from the Table 2 that majority of the respondents (76.15 per cent) were gents. Lady veterinary surgeons were only 23.85 per cent.

4.1.3 Marital status

Table 3. Distribution of respondents based on marital status

n=130

Sl. No	Marital status	F	Percentage
1.	Married	113	86.92
2.	Unmarried	17	13.08
	Total	130	100.00

Table 3 reveals that most of the respondents (86.92 per cent) were married. Those unmarried were 13.08 per cent.

4.1.4 Number of children

Table 4. Distribution of respondents based on number of children

n=98

Sl. No	No. of children	Frequency	Percentage
1.	Single child	58	59.18
2.	Two children	38	38.77
3.	Three children	2	2.05
	Total	98	100.00

It can be seen from Table 4 that majority of the respondents (59.18 per cent) were having a single child. Those having two and three children respectively were 38.77 and 2.05 per cent, respectively.

4.1.5 Age of the youngest child

Table 5. Distribution of respondents based on age of the youngest child

n=98

Sl. No	Age of the youngest child	Frequency	Percentage
1.	$\leq$ 3 years	70	71.43
2.	> 3 years	28	28.57
	Total	98	100.00

It is evident from Table 5 that the age of the youngest child of most of the respondents (71.43 per cent) was three or less than three years. In the case of the others respondents (28.57 per cent) it was the greater than three years.

4.1.6 Family

Table 6. Distribution of respondents based on type of family

n=130

Sl. No	Type of family	Frequency	Percentage
1.	Joint	58	44.62
2.	Nuclear	72	55.38
	Total	130	100.00

From Table 6 it can be seen that respondents belonging to nuclear family (55.38 per cent) were more than those belonging to joint family (44.62 per cent).

4.1.7 Educational qualification

Table 7. Distribution of respondents based on educational qualification

n=130

Sl. No	Educational qualification	Frequency	Percentage
1.	Graduate	96	73.85
2.	Graduate holding additional certificate/ diploma	5	3.85
3.	Post graduate	29	22.30
	Total	130	100.00

It can be noticed from Table 7 that most of the respondents (73.85 per cent) were graduates, followed by Post Graduates (22.30 per cent) and then graduates holding additional certificate/ diploma (3.85 per cent).

4.1.8 Location of residence

Table 8. Distribution of respondents based on location of their residence with respect to the district in which they were working

n=130

Sl. No	Location	Frequency	Percentage
1.	Same district	104	80.00
2.	Nearby district	14	10.77
3.	Faraway district	12	9.23
	Total	130	100.00

It is evident from Table 8 that majority of the respondents (80.00 per cent) were working in the home district followed by those (10.77 per cent) working in nearby districts and then those (9.37 per cent) working in faraway districts.

4.1.9 Distance to work place

Table 9. Distribution of respondents based on distance to work place

n=130

Sl. No	Distance to work place	Frequency	Percentage
1.	$\leq$ 50 kms	114	87.69
2.	51-100 kms	13	10.00
3.	$\geq$ 101 kms	3	2.31
	Total	130	100.00

It can be noted from Table 9 that the respondents (87.69 per cent) who commuted less than or equal to 50 kilometres were more as compared to those who commuted 51-100 kilometres (10.83 per cent) and more than or equal to 101 kilometres (2.31 per cent).

4.1.10 Professional Experience

Table 10. Distribution of respondents based on professional experience

n=130

Sl. No	Experience	Frequency	Percentage
1.	$\leq$ 5 years	57	43.85
2.	6-10 years	65	50.00
3.	$\geq$ 11 years	8	6.15
	Total	130	100.00

Table 10 shows that the respondents who had 6 to 10 years of professional experience (50.00 per cent) were more, followed by those who had less than or equal to five years (43.85 per cent) and greater than or equal to 11 years (6.15 per cent).

4.1.11 Number of seminars, symposia and workshops attended

Table 11. Distribution of respondents based on number of seminars, symposia and workshops attended

n = 130

Sl. No	Number of seminars, symposia and workshop attended	Frequency	Percentage
1.	≤ 5	112	86.15
2.	> 5	18	13.85
	Total	130	100.00

It is seen from Table 11 that the respondents who attended five or less than five seminars (86.15 per cent) were more than those attended more than six seminars (13.85 per cent).

4.1.12 Exposure to professional journals

Table 12 Distribution of respondents based on exposure to professional journals

n = 130

Sl. No	No. of professional journals read	Frequency	Percentage
1.	Up to 3	102	78.46
2.	More than 3	28	21.54
	Total	130	100.00

Table 12 shows that majority of the respondents (78.46 per cent) read up to three journals, while the remaining respondents (21.54 per cent) read more than three journals.

4.1.13 Exposure to periodicals

Table 13 Distribution of respondents based on exposure to periodicals

n = 130

Sl. No	No. of periodicals read	Frequency	Percentage
1.	≤ 3	111	85.38
2.	> 3	19	14.62
	Total	130	100.00

It is evident from Table 13 that majority of the respondents (85.38 per cent) read up to three periodicals, while the remaining respondents (14.62 per cent) read more than three.

4.1.14 Number of trainings attended

Table 14 Distribution of respondents based on number of trainings attended

n = 130

Sl. No	No. of trainings attended	Frequency	Percentage
1.	None	28	21.54
2.	≤ 5	97	74.61
3.	> 5	5	3.85
	Total	130	100.00

It can be referred from Table 14 that the respondents (74.61 per cent) who had attended up to five trainings were more as compared to those who had not attended any training (21.54 per cent) and those who had attended more than six trainings (3.85 per cent).

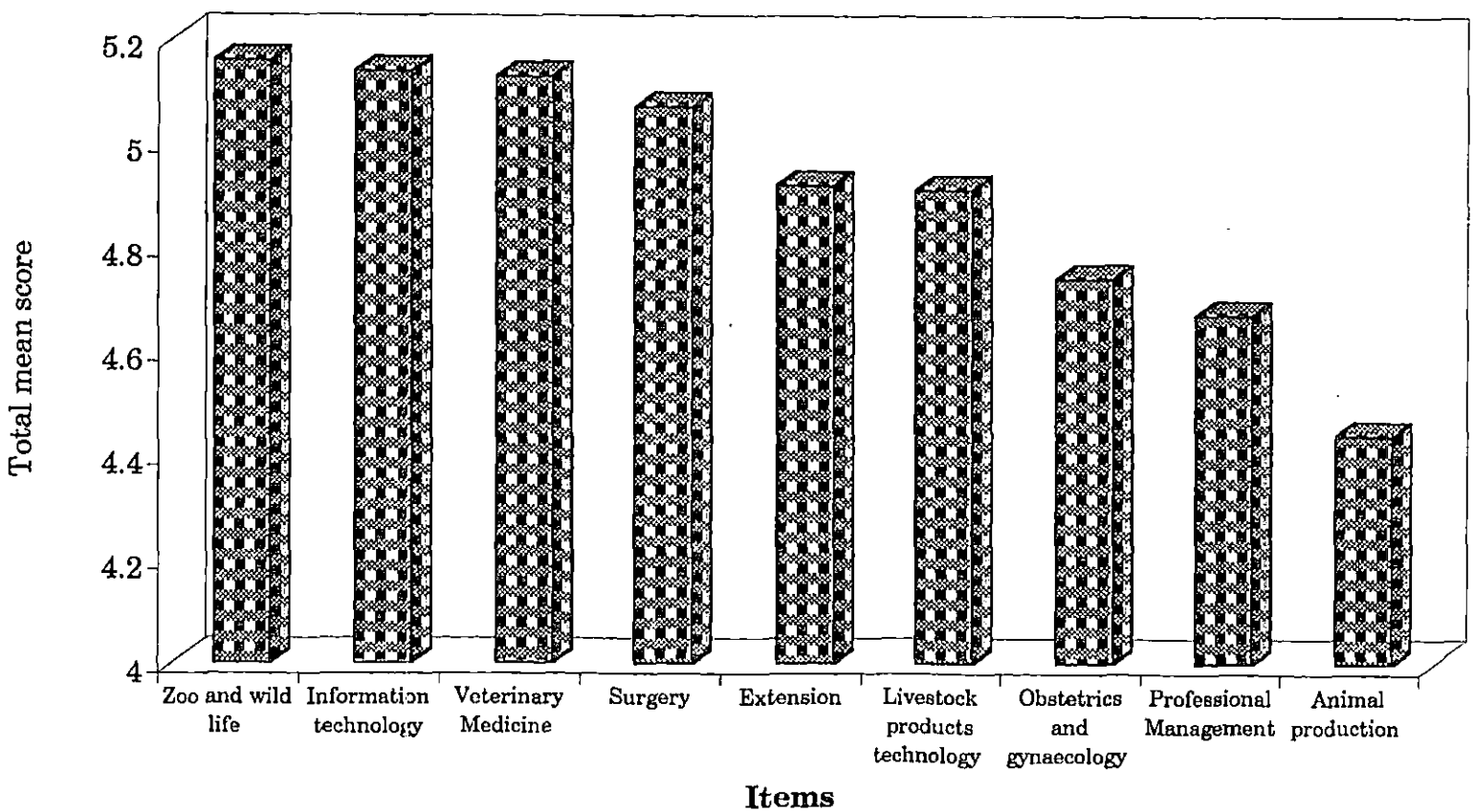
4.2 Training needs

4.2.1 Training needs in major subject matter areas

Table 15. Knowledge and skill oriented training needs of veterinary surgeons in major subject matter areas

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Zoo and wild life	2.63	1	2.53	3	5.16	1
2.	Information technology	2.59	2	2.55	2	5.14	2
3.	Veterinary Medicine	2.58	3	2.55	2	5.13	3
4.	Surgery	2.51	4	2.56	1	5.07	4
5.	Extension	2.49	6	2.43	4	4.92	5
6.	Livestock products technology	2.50	5	2.41	5	4.91	6
7.	Obstetrics and gynaecology	2.35	7.	2.39	6	4.74	7
8.	Professional Management	2.34	8	2.33	7	4.67	8
9.	Animal production	2.24	9	2.20	8	4.44	9

Fig. 1 Total mean scores for the knowledge cum skill training needs of the major subject matter areas



It can be seen from Table 15 that as far as the need for knowledge in various subject matter areas was concerned, respondents ranked zoo and wild life (2.63) first followed by information technology (2.59), medicine (2.58), surgery (2.51), livestock product technology (2.50), extension (2.49), obstetrics and gynaecology (2.35), professional management (2.34) and animal production (2.24).

As far as the need for skill in various subject matter areas was concerned, respondents ranked surgery (2.56) first followed by veterinary medicine (2.55) information technology (2.55), zoo and wild life (2.53), extension (2.43), livestock products technology (2.41), obstetrics and gynaecology (2.39), professional management (2.33) and animal production (2.20).

Further, when the total of mean scores of knowledge and skill were considered the respondents ranked zoo and wild life (5.16) first followed by information technology (5.14), veterinary medicine (5.13), surgery (5.07), extension (4.92), livestock products technology (4.19), obstetrics and gynaecology (4.74), professional management (4.67) and animal production (4.44).

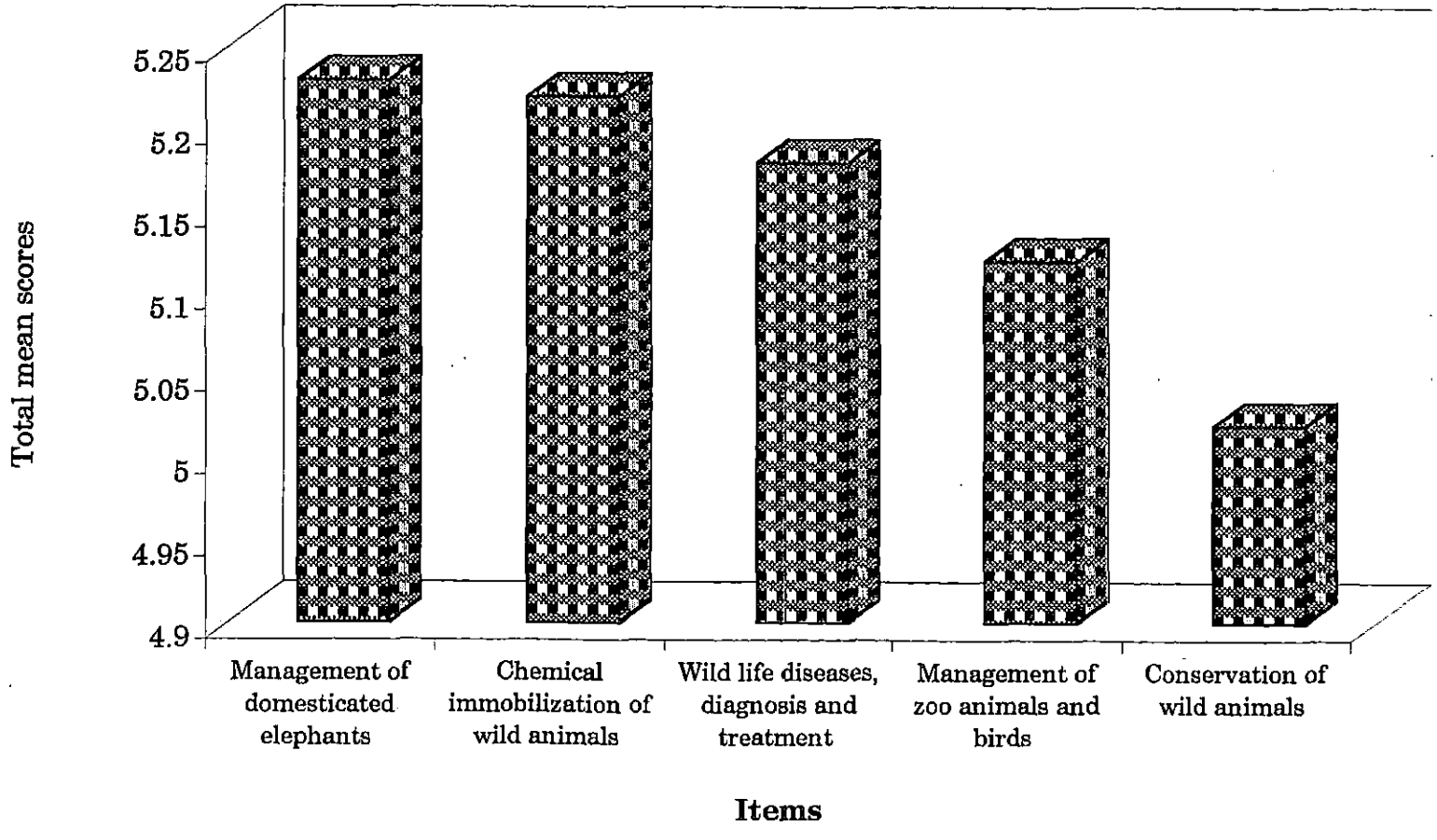
Table 16 Knowledge and skill oriented training needs of veterinary surgeons under zoo and wild life

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Management of domesticated elephants	2.64	3	2.59	1	5.23	1
2.	Chemical immobilization of wild animals	2.65	1	2.57	2	5.22	2
3.	Wild life diseases, diagnosis and treatment	2.65	1	2.53	3	5.18	3
4.	Management of zoo animals and birds	2.64	3	2.48	4	5.12	4
5.	Conservation of wild animals	2.56	4	2.46	5	5.02	5

It can be seen from Table 16 that as far as the need for knowledge in zoo and wild life was concerned, the respondents ranked wild life diseases, diagnosis and treatment (2.65) and chemical immobilization of wild animals (2.65) as first followed by management of domesticated elephants (2.64), management of zoo animals and birds (2.64) and conservation of wild animals (2.56).

As far as the need for skill in zoo and wild life was concerned the respondents ranked management of domesticated elephants (2.59) first followed by chemical immobilization of wild animals (2.57); wild life diseases, diagnosis and treatment (2.53); management of zoo animals and birds (2.48) and conservation of wild animals (2.46).

Fig. 2 Total mean scores for the knowledge cum skill training needs of the subject matter areas under zoo and wild life

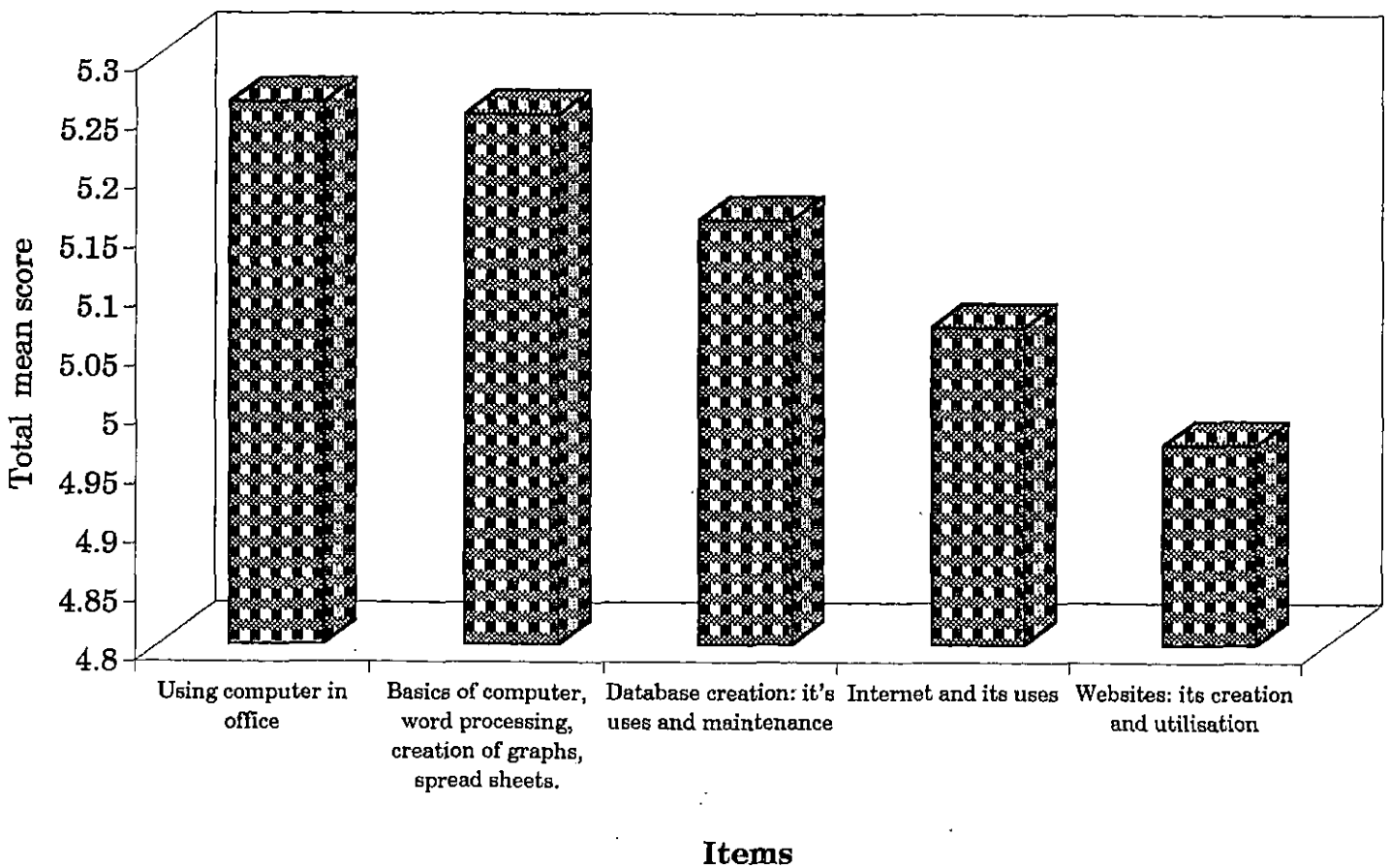


Further,when the total of mean scores of knowledge and skill was considered the respondents ranked management of domesticated elephants (5.23) first followed by chemical immobilization of wild animals (5.22); wild life diseases, diagnosis and treatment (5.18); management of zoo animals and birds (5.12) and conservation of wild animals (5.02).

Table 17. Knowledge and skill oriented training needs of veterinary surgeons under information technology

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Using computer in office	2.65	2	2.61	1	5.26	1
2.	Basics of computer, word processing, creation of graphs, spread sheets.	2.66	1	2.59	2	5.25	2
3.	Database creation: it's uses and maintenance	2.61	3	2.55	3	5.16	3
4.	Internet and its uses	2.55	4	2.52	4	5.07	4
5.	Websites: its creation and utilisation	2.48	5	2.49	5	4.97	5

Fig. 3 Total mean scores for the knowledge cum skill training needs of the subject matter areas under information technology



It can be seen from Table 17 that as far as the need for knowledge in information technology was concerned, the respondents ranked basics of computer, word processing, creation of graphs, spread sheets (2.66) first followed by using computer in office (2.65), database creation: it's uses and maintenance (2.61), internet and its uses (2.55) and websites: its creation and utilisation (2.48).

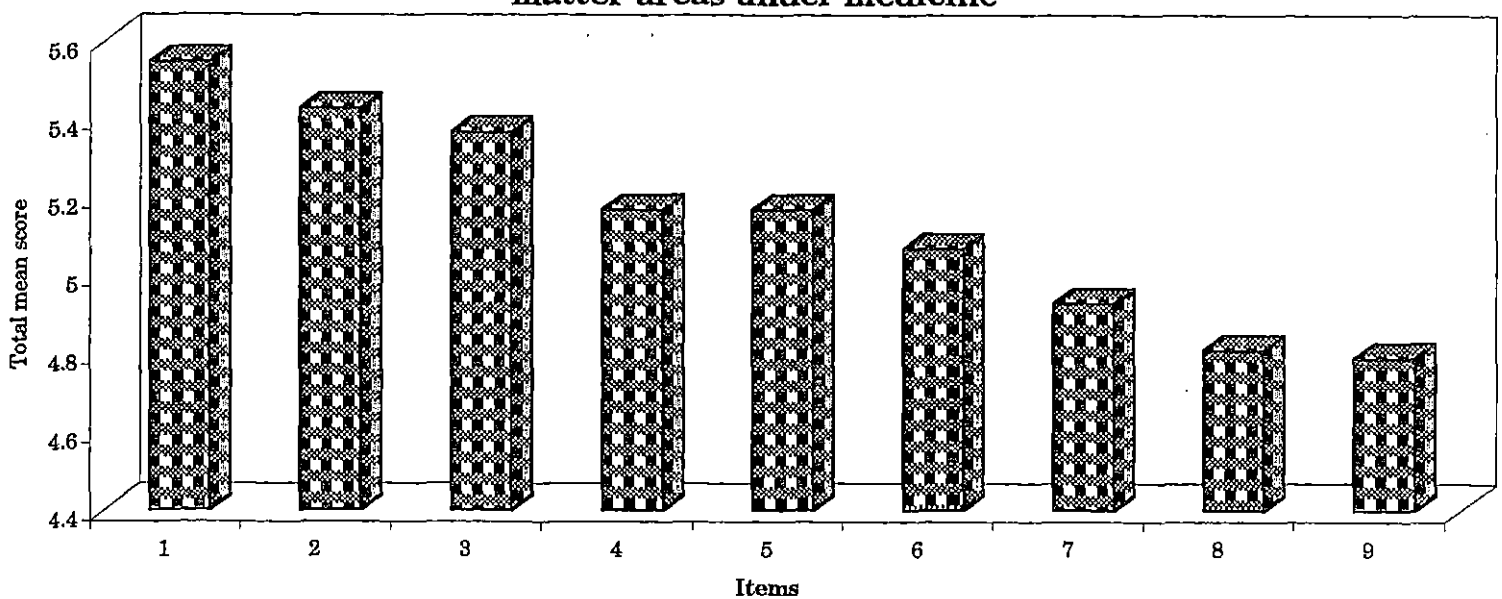
As far as the need for skill in information technology was concerned, the respondents ranked using computer in office (2.61) first followed by basics of computer, word processing, creation of graphs, spread sheets (2.59), database creation: it's uses and maintenance (2.55), internet and its uses (2.52) and websites: its creation and utilisation (2.49).

Further, considering the total mean scores of knowledge and skill the respondents ranked using computer in office (5.26) first followed by basics of computer, word processing, creation of graphs, spread sheets (5.25), database creation, it's uses and maintenance (5.16), internet and its uses (5.07) and websites, its creation and utilisation (4.97).

Table 18 Knowledge and skill oriented training needs of veterinary surgeons under veterinary medicine

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Modern diagnostic procedures	2.78	1	2.77	1	5.55	1
2.	Diagnosis, treatment and control of emerging diseases of livestock	2.75	2	2.68	2	5.43	2
3.	Diagnosis, treatment and control of emerging diseases of poultry	2.72	3	2.65	3	5.37	3
4.	Common poisoning in animals and their treatment	2.62	4	2.55	5	5.17	4
5.	Diagnosis, treatment and control of diseases of pet animals and birds	2.58	5	2.59	4	5.17	4
6.	Diagnosis, treatment and control of contagious and infectious diseases of livestock	2.48	7	2.59	4	5.07	5
7.	Diagnosis, treatment and control of contagious and infectious diseases of poultry	2.50	6	2.43	6	4.93	6
8.	Diagnosis, treatment and control of metabolic and deficiency diseases of livestock	2.39	9	2.42	7	4.81	7
9.	Diagnosis, treatment and control of metabolic and deficiency diseases of poultry	2.41	8	2.38	8	4.79	8

Fig. 4 Total mean scores for the knowledge cum skill training needs of the subject matter areas under medicine



1. Modern diagnostic procedures
2. Diagnosis, treatment and control of emerging diseases of livestock
3. Diagnosis, treatment and control of emerging diseases of poultry
4. Common poisoning in animals and their treatment
5. Diagnosis, treatment and control of diseases of pet animals and birds
6. Diagnosis, treatment and control of contagious and infectious diseases of live stock
7. Diagnosis, treatment and control of contagious and infectious diseases of poultry
8. Diagnosis, treatment and control of metabolic and deficiency diseases of livestock
9. Diagnosis, treatment and control of metabolic and deficiency diseases of poultry

It can be seen from Table 18 that as far as the need for knowledge under veterinary medicine was concerned the respondents ranked modern diagnostic procedures (2.78) first followed by diagnosis, treatment and control of emerging diseases of livestock (2.75), diagnosis, treatment and control of emerging diseases of poultry (2.72), common poisoning in animals and their treatment (2.62), diagnosis, treatment and control of diseases of pet animals and birds (2.58), diagnosis, treatment and control of contagious and infectious diseases of poultry (2.50), diagnosis, treatment and control of contagious and infectious diseases of livestock (2.48), diagnosis, treatment and control of metabolic and deficiency diseases of poultry (2.41) and diagnosis, treatment and control of metabolic and deficiency disease of livestock (2.39).

As far as the need for skill under medicine was concerned the respondents ranked modern diagnostic procedures (2.77) first followed by diagnosis, treatment and control of emerging diseases of livestock (2.68), diagnosis, treatment and control of emerging diseases of poultry (2.65), diagnosis, treatment and control of diseases of pet animals and birds (2.59), common poisoning in animals and their treatment (2.55), diagnosis, treatment and control of contagious and infectious diseases of livestock (2.55), diagnosis, treatment and control of contagious and infectious

diseases of poultry (2.43), diagnosis, treatment and control of metabolic and deficiency diseases of livestock (2.42), diagnosis, treatment and control of metabolic and deficiency diseases of poultry (2.38).

Further when the total of mean scores of knowledge and skill were considered, the respondents ranked modern diagnostic procedures (5.55) first followed by diagnosis, treatment and control of emerging diseases of livestock (5.43), diagnosis, treatment and control of emerging diseases of poultry (5.37), common poisoning in animals and their treatment (5.17), diagnosis, treatment and control of diseases of pet animals and birds (5.17), diagnosis, treatment and control of contagious and infectious diseases of livestock (5.07), diagnosis, treatment and control of contagious and infectious diseases of poultry (4.93), diagnosis, treatment and control of metabolic and deficiency diseases of livestock (4.81) diagnosis, treatment and control of metabolic and deficiency disease of poultry (4.79).

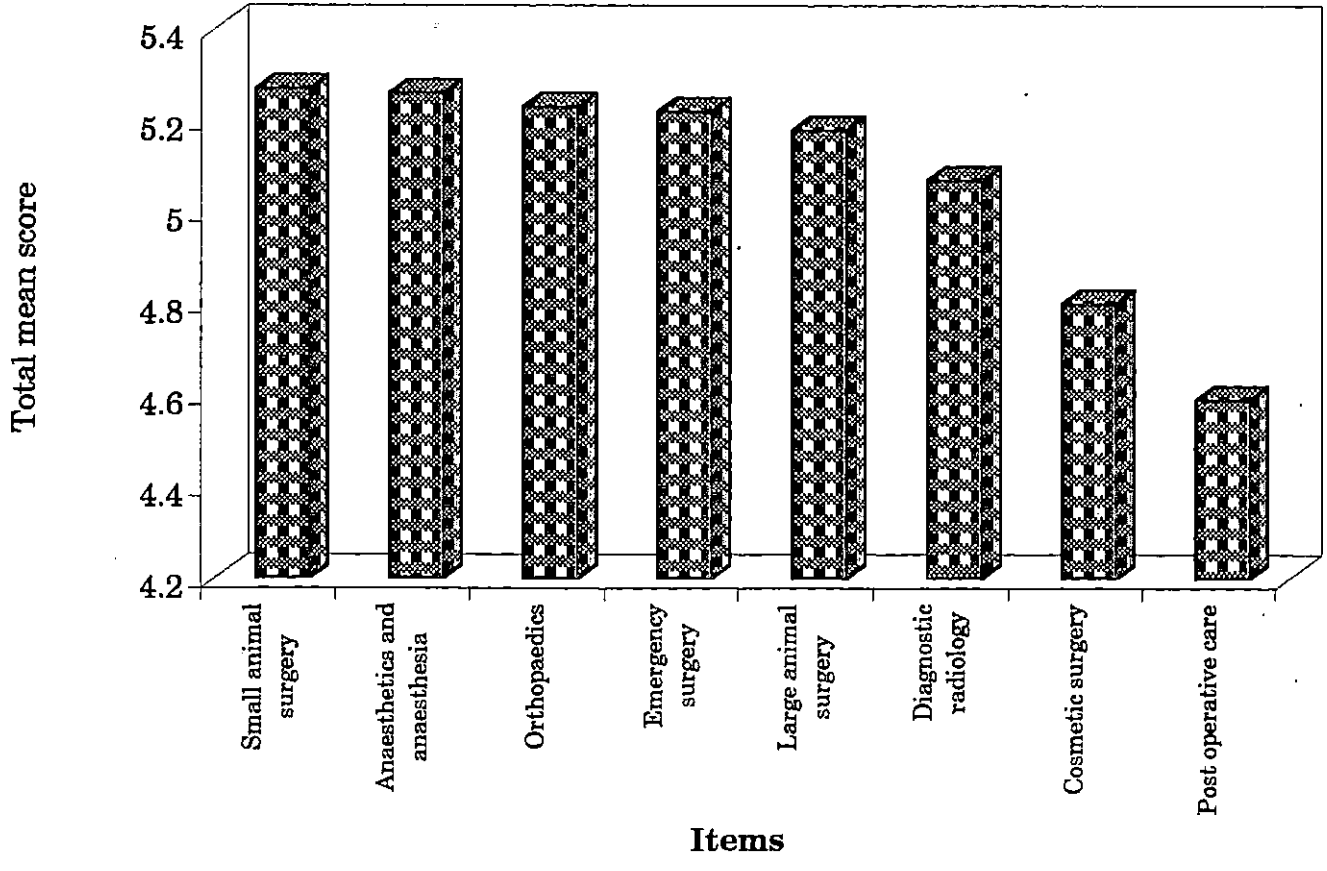
Table 19. Knowledge and skill oriented training needs of veterinary surgeons under surgery

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Small animal surgery	2.61	2	2.66	1	5.27	1
2.	Anaesthetics and anaesthesia	2.62	1	2.64	3	5.26	2
3.	Orthopaedics	2.59	3	2.64	3	5.23	3
4.	Emergency surgery	2.57	4	2.65	2	5.22	4
5.	Large animal surgery	2.55	5	2.63	4	5.18	5
6.	Diagnostic radiology	2.53	6	2.54	5	5.07	6
7.	Cosmetic surgery	2.37	7	2.43	6	4.80	7
8.	Post operative care	2.27	8	2.32	7	4.59	8

It can be seen from Table 19 that as far as the need for knowledge in surgery was concerned, the respondents ranked anaesthetics and anaesthesia (2.62) first followed by small animal surgery (2.61), orthopaedics (2.59), emergency surgery (2.57), large animal surgery (2.55), diagnostic radiology (2.53), cosmetic surgery (2.37) and post operative care (2.27).

As far as the need for skill in surgery was concerned, the respondents ranked small animal surgery (2.66) first followed by emergency surgery (2.65), anaesthetics and anaesthesia (2.64), orthopaedics (2.64), large animal surgery (2.63), diagnostic radiology (2.54), cosmetic surgery (2.43) and post operative care (2.32).

Fig. 5 Total mean scores for the knowledge cum skill training needs of the subject matter areas under surgery



Further, when the total of mean scores of knowledge and skill was considered, the respondents ranked small animal surgery (5.27) first followed by anaesthetics and anaesthesia (5.26), orthopaedics (5.23), emergency surgery (5.22), large animal surgery (5.18), diagnostic radiology (5.07), cosmetic surgery (4.80) and post operative care (4.59).

Table 20. Knowledge and skill oriented training needs of veterinary surgeons under extension

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Modern extension teaching methods	2.58	1	2.51	1	5.09	1
2.	Advanced training methods & HRD	2.58	1	2.48	3	5.06	2
3.	Project formulation, implementation and evaluation	2.52	2	2.50	2	5.02	3
4.	Mass media communication and journalism	2.52	2	2.43	4	4.95	4
5.	Organising seminars, symposia and exhibition	2.43	3	2.38	5	4.81	5
6.	Entrepreneurship/ leadership development among livestock owners	2.39	5	2.37	6	4.76	6
7.	Participatory rural appraisal (PRA) techniques	2.40	4	2.35	7	4.75	7

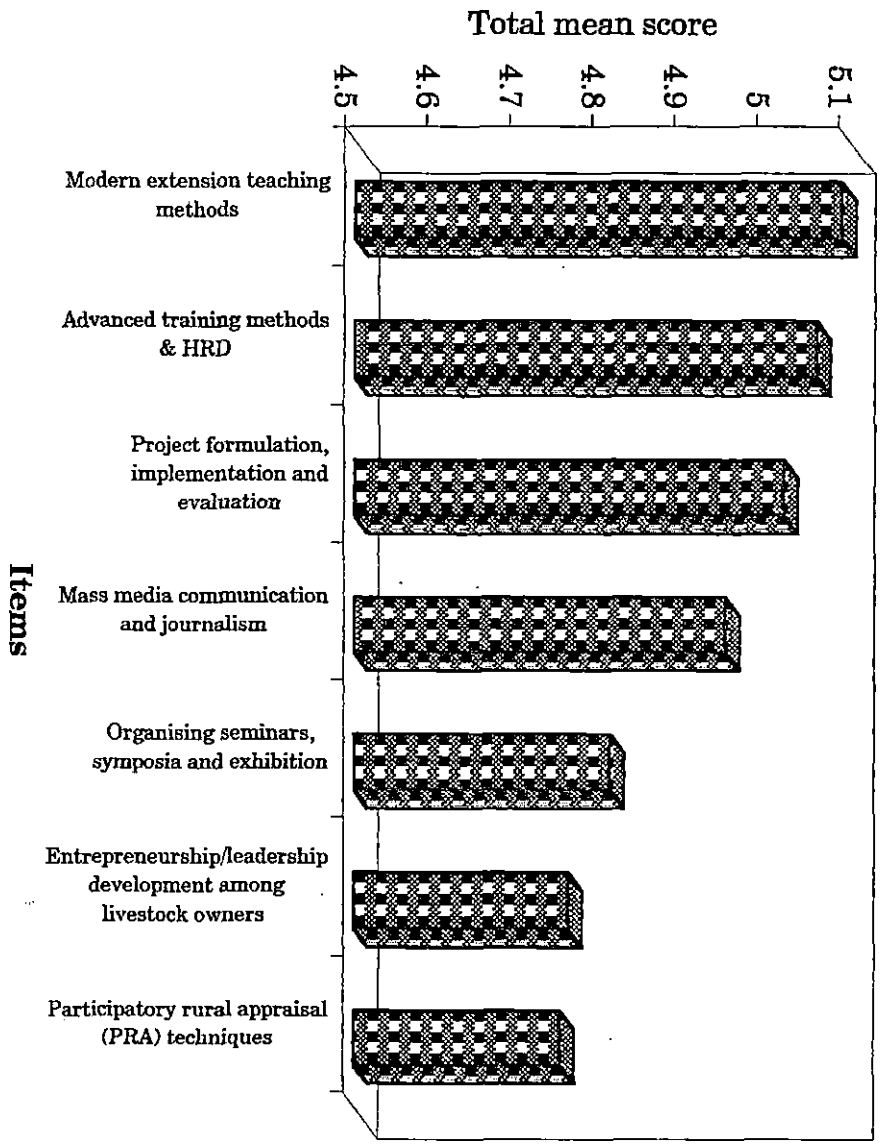


Fig. 6 Total mean scores for the knowledge cum skill training needs of the subject matter areas under extension

It can be seen from Table 20 that as far as the need for knowledge in extension was concerned, the respondents ranked modern extension teaching methods (2.58), advanced training methods and HRD (2.58) as first followed by project formulation, implementation and evaluation (2.52), mass media communication and journalism (2.52), organising seminars, symposia and exhibition (2.43), participatory rural appraisal (PRA) techniques (2.40), and entrepreneurship/ leadership development among livestock owners (2.39).

As far as the need for skill in extension was concerned, the respondents ranked modern extension teaching methods (2.51) first followed by project formulation, implementation and evaluation (2.50), advanced training methods and HRD (2.48), mass media communication and journalism (2.43), organising seminars, symposia and exhibition (2.38), entrepreneurship/leadership development among livestock owners (2.37) and participatory rural appraisal (PRA) techniques (2.35).

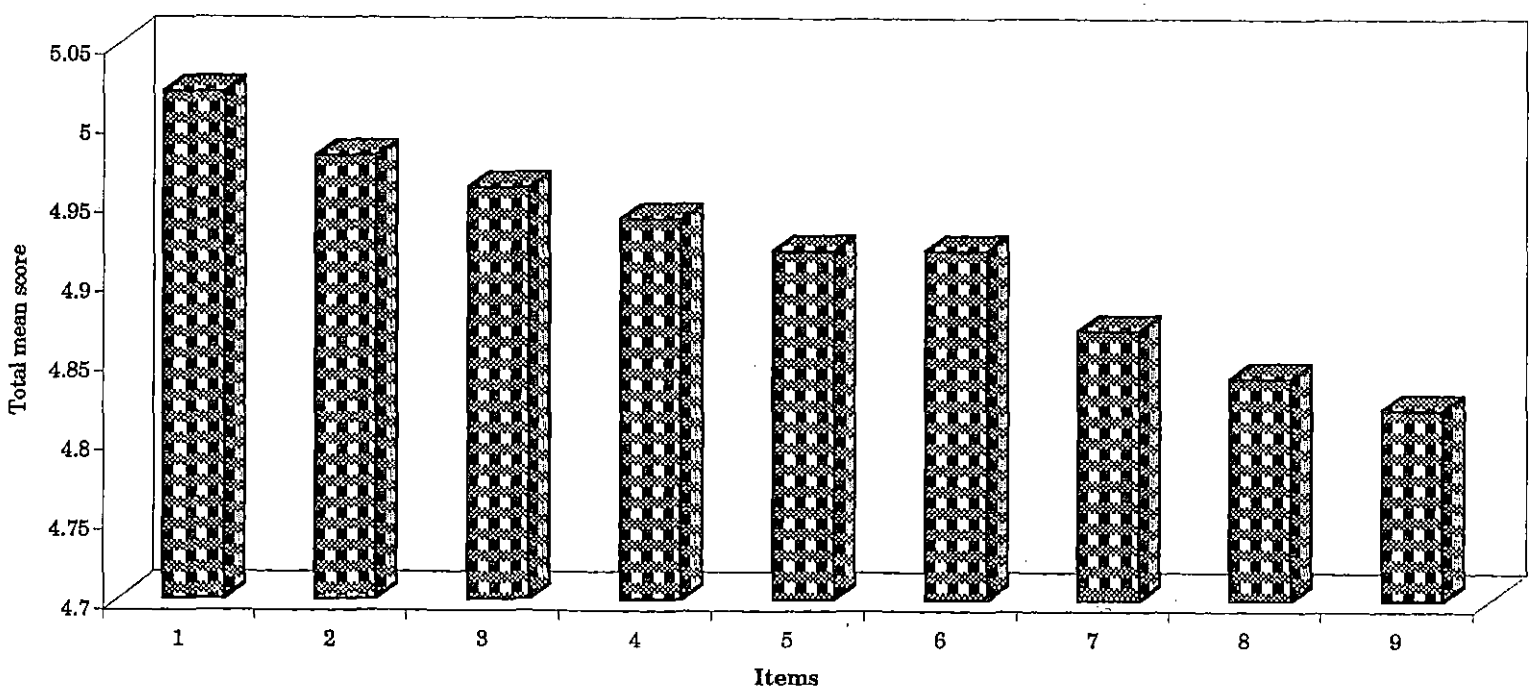
Further, when the total of mean scores of knowledge and skill was considered, the respondents ranked the modern extension teaching methods (5.09) first followed by advanced training methods & HRD (5.06), project formulation, implementation and evaluation (5.02), mass media communication and journalism (4.95), organising

seminars, symposia and exhibition (4.81), entrepreneurship/leadership development among livestock owners, (4.76) and participatory rural appraisal (PRA) techniques (4.75).

Table 21. Knowledge and skill oriented training needs of veterinary surgeons under livestock products technology

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Quality assurance of meat & meat products	2.52	3	2.50	1	5.02	1
2.	Food borne infections & intoxications	2.50	5	2.48	2	4.98	2
3.	Wholesome meat production	2.51	4	2.45	3	4.96	3
4.	Disposal of carcasses and slaughter house waste	2.53	2	2.41	4	4.94	4
5.	Treatment and disposal of slaughter house by-products and condemned materials	2.54	1	2.38	6	4.92	5
6.	Design and management of abattoir	2.52	3	2.40	5	4.92	5
7.	Milk and milk products technology	2.46	7	2.41	4	4.87	6
8.	Meat and meat products technology	2.45	8	2.39	7	4.84	7
9.	Transportation and marketing of live stock products	2.47	6	2.35	8	4.82	8

Fig. 7 Total mean scores for the knowledge cum skill training needs of the subject matter areas under livestock products technology



1. Quality assurance of meat & meat products
2. Food borne infections & intoxications
3. Wholesome meat production
4. Disposal of carcasses and slaughter house waste
5. Treatment and disposal of slaughter house by-products and condemned materials
6. Design and management of abattoir
7. Milk and milk products technology
8. Meat and meat products technology
9. Transportation and marketing of live stock products

It can be seen from Table 21 that as far as the need for knowledge in livestock products technology was concerned, the respondents ranked the treatment and disposal of slaughter house by-products and condemned materials (2.54) first followed by disposal of carcasses and slaughter house waste (2.53), quality assurance of meat and meat products (2.52), design and management of abattoir (2.52), wholesome meat production (2.51), food borne infections and intoxications (2.50), transportation and marketing of live stock products (2.47), milk and milk products technology (2.46) and meat and meat products technology (2.45).

As far as the need for skill in livestock products was concerned, the respondents ranked quality assurance of meat and meat products (2.48) first followed by food borne infections and intoxications (2.48), wholesome meat production (2.45), disposal of carcasses and slaughter house waste (2.41), milk and milk products technology (2.41), design and management of abattoir (2.40), meat and meat products technology (2.39), treatment and disposal of slaughter house by products and condemned materials (2.38), and transportation and marketing of livestock products (2.35).

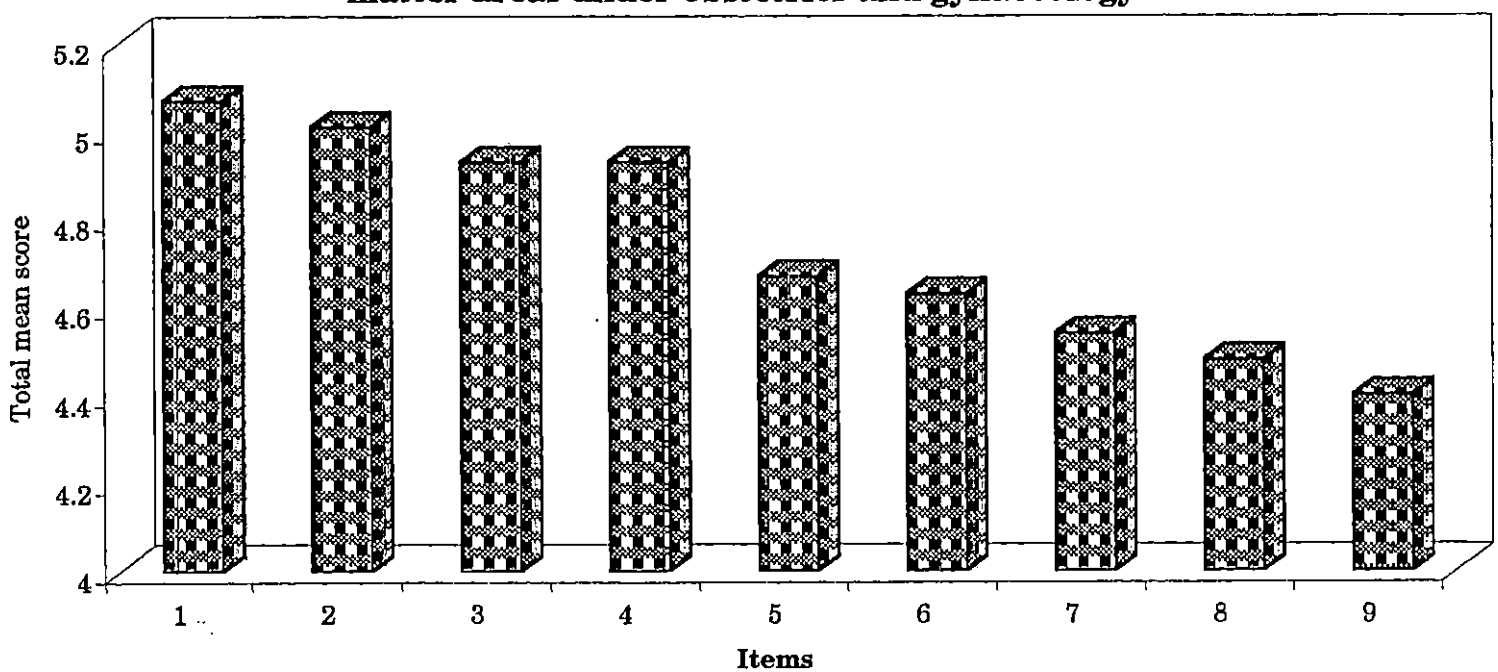
Further, when the total of mean scores of knowledge and skills was considered, the respondents ranked quality assurance of meat and meat products (5.02) first followed by food borne infections and intoxications (4.98), wholesome meat production (4.96), disposal

of carcasses and slaughter house waste (4.94), treatment and disposal of slaughter house by-products and condemned materials (4.92) and design and management of abattoir (4.92). milk and milk products technology (4.87), meat and meat products technology (4.84) and transportation and marketing of livestock products (4.82).

Table 22. Knowledge and skill oriented training needs of veterinary surgeons under obstetrics and gynaecology

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Embryo transfer technology	2.54	1	2.53	1	5.07	1
2.	Infertility management in farm animals	2.49	2	2.52	2	5.01	2
3.	Hormones and their application in reproduction	2.48	3	2.45	3	4.93	3
4.	Infertility management in pet animals	2.48	3	2.45	3	4.93	3
5.	Diagnosis and correction of various types of dystocia	2.23	6	2.44	4	4.67	4
6.	Accidents of gestation and their management	2.28	4	2.25	5	4.63	5
7.	Post parturient complications & their management	2.25	5	2.29	6	4.54	6
8.	Diagnosis of pregnancy and foetal abnormalities	2.19	8	2.29	6	4.48	7
9.	Infertility in male animals	2.21	7	2.19	7	4.40	8

Fig. 8 Total mean scores for the knowledge cum skill training needs of the subject matter areas under obstetrics and gynaecology



1. Embryo transfer technology
2. Infertility manage-ment in farm animals
3. Hormones and their application in reproduction
4. Infertility management in pet animals
5. Diagnosis and correction of various types of dystocia
6. Accidents of gestation and their management
7. Post parturient complications & their management
8. Diagnosis of pregnancy and foetal abnormalities
9. Infertility in male animals

It can be seen from Table 22 that as far as the need for knowledge under the subject matter area of obstetrics and gynaecology was concerned the respondents ranked embryo transfer technology (2.54) first followed by infertility management in farm animals (2.49), hormones and their application in reproduction (2.48) &infertility management in pet animals (2.48), accidents of gestation and their management (2.28), diagnosis and correction of various types of dystocia (2.23), post parturient complications and their management (2.25), infertility in male animals (2.21) and diagnosis of pregnancy and foetal abnormalities (2.19).

As far as the need for skill under obstetrics and gynaecology was concerned, the respondents ranked embryo transfer technology (2.53), infertility management in farm animals (2.52), hormones and their application in reproduction (2.45) &infertility management in pet animals (2.45), diagnosis and correction of various types of dystocia (2.44), accidents of gestation and their management (2.35), post parturient complications and their management (2.29) &diagnosis of pregnancy and foetal abnormalities (2.29) and infertility in male animals (2.19).

Further, when total of mean scores of knowledge and skill was considered the respondents ranked embryo transfer technology (5.07) first followed by infertility management in farm animals (5.01), hormones and their application in reproduction (4.93), infertility management in pet animals (4.93), diagnosis and correction of various types of dystocia (4.67), accidents of gestation and their management

(4.63), post parturient complications and their management (4.54), diagnosis of pregnancy and foetal abnormalities (4.48) and infertility in male animals (4.40).

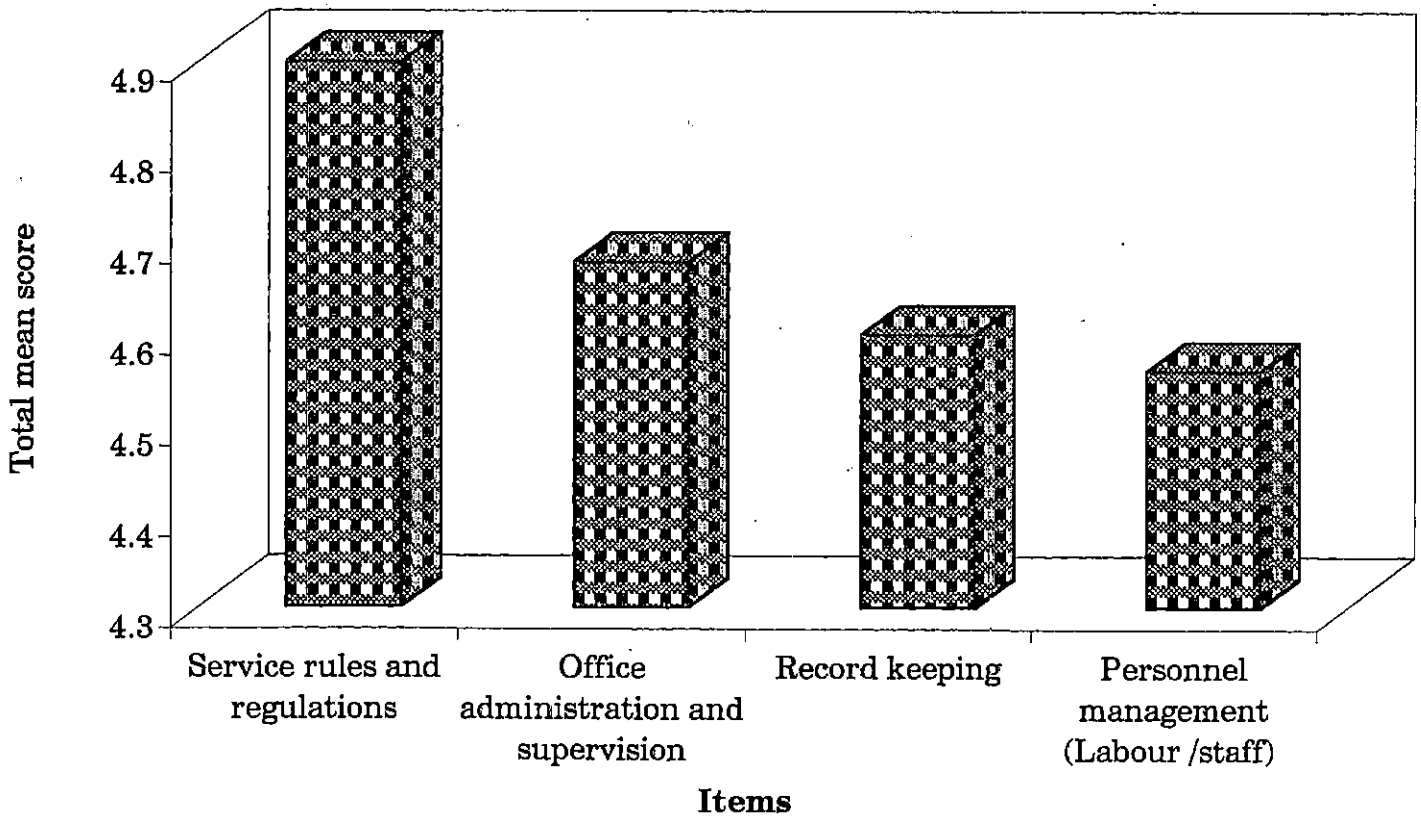
Table 23. Knowledge and skill oriented training needs of veterinary surgeons under professional management

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Service rules and regulations	2.47	1	2.43	1	4.90	1
2.	Office administration and supervision	2.35	2	2.33	2	4.68	2
3.	Record keeping	2.30	4	2.30	3	4.60	3
4.	Personnel management (Labour /staff)	2.31	3	2.25	4	4.56	4

It can be seen from Table 23 that as far as the need for knowledge in professional management was concerned, the respondents ranked service rules and regulations (2.47) first followed by office administration and supervision (2.35), personnel management (Labour /staff) (2.31) and record keeping (2.30).

As far as the need for skill in professional management was concerned, the respondents ranked service rules and regulations (2.43) first followed by office administration and supervision (2.33), record keeping (2.30) and personnel management (Labour /staff) (2.25).

Fig. 9 Total mean scores for the knowledge cum skill training needs of the subject matter areas under professional management

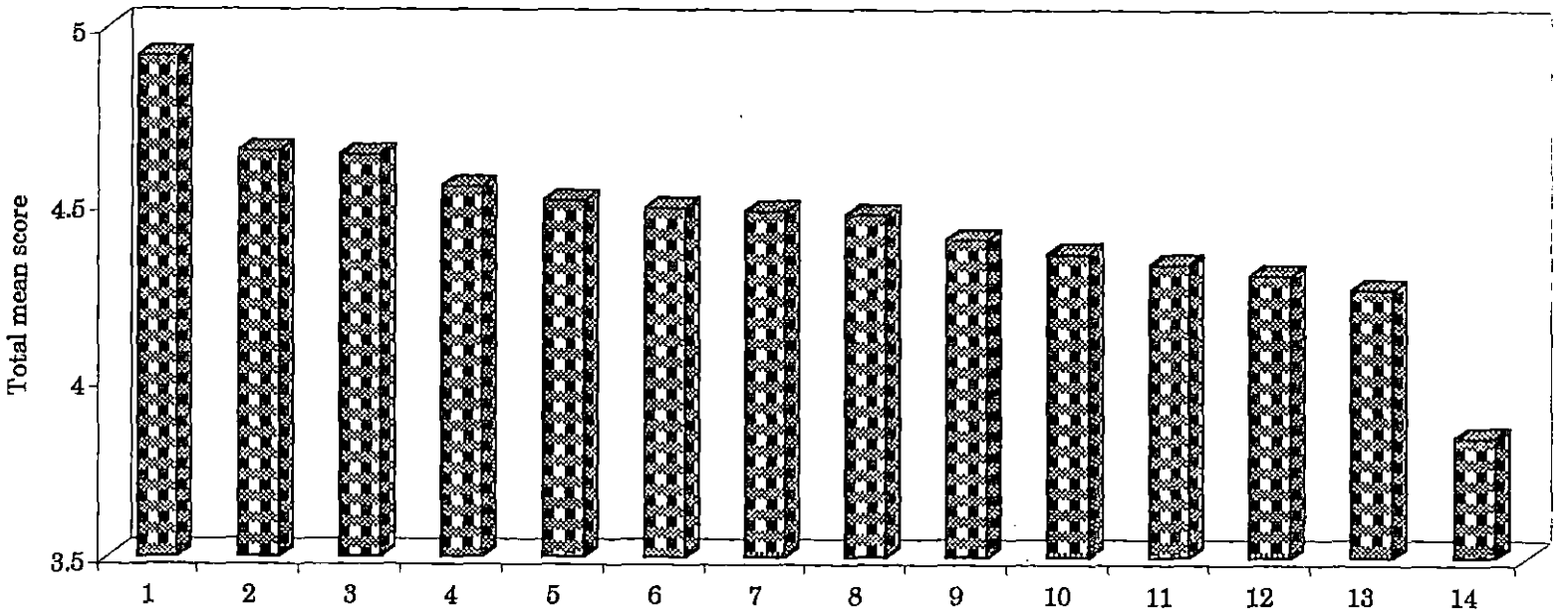


Further, when the total of mean scores of knowledge and skill was considered, the respondents ranked service rules and regulations (4.90) first followed by office administration and supervision (4.68), record keeping (4.60) and personnel management (Labour /staff) (4.56).

Table 24. Knowledge and skill oriented training needs of veterinary surgeons under animal production

Sl. No	Major subject matter areas	Knowledge		Skill		Total Mean score	Rank
		Mean score	Rank	Mean score	Rank		
1.	Breeding and management of pet animals	2.48	1	2.44	1	4.92	1
2.	Production of meat animals	2.35	2	2.30	3	4.65	2
3.	Swine production and management	2.33	3	2.31	2	4.64	3
4.	Dairy cattle production and management	2.31	4	2.24	4	4.55	4
5.	Broiler production and management	2.30	5	2.21	6	4.51	5
6.	Goat production and management	2.27	6	2.22	5	4.49	6
7.	Fodder production	2.27	6	2.21	6	4.48	7
8.	Buffalo production and management	2.27	6	2.20	7	4.47	8
9.	Duck production and management	2.22	7	2.18	8	4.40	9
10	Quail production and management	2.21	8	2.15	9	4.36	10
11	Farm hygiene and sanitation	2.18	9	2.14	10	4.33	11
12	Layer production and management	2.09	11	2.21	6	4.30	12
13	Turkey production and management	2.17	10	2.09	11	4.26	13
14	Sheep production and management	1.95	12	1.89	12	3.84	14

Fig. 10 Total mean scores for the knowledge cum skill training needs of the subject matter areas under animal production



1, Breeding and management of pet animals
2. Production of meat animals
3. Swine production and management
4. Dairy cattle production and management
5. Broiler production and management
6. Goat production and management
7. Fodder production
8. Buffalo production and management
9. Duck production and management
10. Quail production and management
11. Farm hygiene and sanitation
12. Layer production and management
13. Turkey production and management
14. Sheep production and management

It can be seen from Table 24 that as far as the need for knowledge in animal production was concerned, the respondents ranked breeding and management of pet animals (2.48) first followed by production of meat animals (2.35), swine production and management (2.33), dairy cattle production and management (2.31), broiler production and management (2.30), goat production and management (2.27), fodder production (2.27), buffalo production and management (2.27), duck production and management (2.22), quail production and management (2.21), farm hygiene and sanitation (2.18), turkey production and management (2.17), layer production and management (2.09) and sheep production and management (1.95).

As far as the need for skill in animal production was concerned, the respondents ranked breeding and management of pet animals (2.44) first followed by swine production and management (2.31), production of meat animals (2.30), dairy cattle production and management (2.24), goat production and management (2.22), broiler production and management (2.21), fodder production (2.21) and layer production and management (2.21), buffalo production and management (2.20), duck production and management (2.18), quail production and management (2.15) farm hygiene and sanitation (2.14), turkey production and management (2.09) and sheep production and management (1.89).

Further, when the total of mean scores of knowledge and skill was considered the respondents ranked the breeding and management of pet animals (4.92) first followed by production of meat animals (4.65), swine production and management (4.64), dairy cattle production and management (4.55), broiler production and management (4.51), goat production and management (4.49), fodder production (4.48), buffalo production and management (4.47), duck production and management (4.40), quail production and management (4.36) farm hygiene and sanitation (4.33), layer production and management (4.30), turkey production and management (4.26) and sheep production and management (3.84).

4.2.2 Correlation of socio-personal characteristics of veterinary surgeons with training need

Correlation was worked out to assess the relationship between the socio-personal characteristics and the expressed training needs of veterinary surgeons. The results of the correlation analysis is presented in Table 25.

Table 25 Correlation between socio-personal characteristics of veterinary surgeons and their training needs in terms of knowledge and skill in various subject matter areas

Sl. No	Socio-personal characteristics	'r' value		
		Knowledge	Skill	Total score
1.	Age	0.140	0.087	0.119
2.	Gender	0.025	0.007	0.017
3.	Marital status	-0.075	-0.071	-0.081
4.	No. of children	0.019	-0.001	0.007
5.	Age of the youngest child	0.082	0.040	0.063
6.	Family	-0.109	-0.169	-0.145
7.	Educational qualification	-0.022	-0.035	-0.030
8.	Professional experience	0.126	0.098	0.117
9.	Location of house	0.100	0.045	0.078
10.	Distance to work place	0.139	0.084	0.117
11.	No. of seminars, symposium and workshops attended	-0.056	-0.044	-0.052
12.	Exposure to professional journals	-0.014	-0.068	-0.041
13.	Exposure to periodicals	0.085	-0.057	0.016
14.	No. of trainings underwent	0.114	-0.071	0.095

Data in Table 25 reveals the correlation between socio-personal characteristics of veterinary surgeons and their training needs. It was found that there was no significant relationship

between the socio-personal characteristics of veterinary surgeons and training needs in terms of both knowledge and skill needs.

4.3 Relevancy rating of training programmes

Table 26. Relevancy of training programmes organised by KAU

Relevancy of the training programme	Name of the training programme
Highly relevant	1. Advances in ruminant medicine (93.58)*
	2. Fertility management of livestock (93.07)
	3. Clinical surgery and anaesthesia (92.82)
	4. Large animal surgery (92.05 per cent)
	5. Fluid therapy and critical care (91.54)
	6. Mastitis and its diagnosis (91.28)
	7. Operative surgery (91.28)
	8. Special clinical diagnostic procedures (90.51)
	9. Advances in diagnosis and treatment of diseases in pet animals and love birds (89.67)
	10. Post mortem techniques (88.72)
	11. Diagnosis of parasitic diseases in domestic animals (85.39)
	12. Anaesthesiology and orthopaedics (84.36)
	13. Chemical immobilisation (83.33)
	14. Brucellosis and its diagnosis (83.07)
	15. Mycotic infection in animals (82.82)
	16. Poultry production and management (82.82)

Relevancy of the training programme	Name of the training programme
	17. Diagnostic radiology and orthopaedics (82.82) 18. Formulation of projects in cattle and goat rearing (82.05 per cent) 19. Breeding, feeding and management strategies for cost efficient pig production in rural sector (82.05 per cent) 20. Management strategies for cost efficient goat production (81.79 per cent) 21. Management strategies for cost effective pig production (80.51 per cent)
Relevant	1. Applied nutrition and feed analysis (80.00) 2. Aflatoxin analysis (79.46) 3. Abattoir management and meat inspection (79.49) 4. Immuno diagnosis of infectious diseases (78.20) 5. Formulation of projects in pig and small animals (77.95) 6. Diagnosis of cancer with special reference to ethmoid cancer (77.18)
Somewhat relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 26 reveals that among the training programmes conducted by KAU, the highly relevant ones as perceived by the respondents, were viz., advances in ruminant

medicine (93.58 per cent), fertility management of livestock (93.07 per cent), clinical surgery and anaesthesia (92.82 per cent), large animal surgery (92.05 per cent), fluid therapy and critical care (91.54 per cent), mastitis and its diagnosis (91.28 per cent), operative surgery (91.28 per cent), special clinical diagnostic procedures (90.51 per cent), advances in diagnosis and treatment of diseases in pet animals and love birds (89.67 per cent), post mortem techniques (88.72 per cent), diagnosis of parasitic diseases in domestic animals (85.39 per cent), anaesthesiology and orthopaedics (84.36 per cent), chemical immobilisation (83.33 per cent), brucellosis and its diagnosis (83.07 per cent), mycotic infection in animals (82.82 per cent), poultry production and management (82.82 per cent), diagnostic radiology and orthopaedics (82.82 per cent), formulation of projects in cattle and goat rearing (82.05 per cent), breeding, feeding and management strategies for cost efficient pig production in rural sector (82.05 per cent), management strategies for cost efficient goat production (81.79 per cent) and management strategies for cost effective pig production (80.51 per cent).

The training programmes perceived relevant were viz., applied nutrition and feed analysis (80.00 per cent), aflatoxin analysis (79.49 per cent), abattoir management and meat inspection (79.49 per cent), immunodiagnosis of infectious diseases (78.20 per cent), formulation of projects in pig and small animals (77.95

per cent) and diagnosis of cancer with special reference to ethmoid cancer (77.18 per cent).

None of the training programmes of KAU was perceived as either somewhat relevant or irrelevant.

Table 27. Relevancy of training programmes organised by KLDB

Relevancy of the training programme	Name of the training programme
Highly relevant	Advanced technology in cattle production (85.38)*
Relevant	Embryo transfer technology (78.97)
Some what relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 27 reveals that among the training programmes conducted by KLDB, the highly relevant one, as perceived by the respondents, was advanced technology in cattle production (85.38 per cent). The training programme perceived as relevant was embryo transfer technology (78.97 per cent).

None of the training programmes was perceived as either somewhat relevant or irrelevant.

Table 28. Relevancy of training programme organised by IVRI

Relevancy of the training programme	Name of the training programme
Highly relevant	1. Advances in clinical diagnosis and therapy in veterinary medicine (93.59)* 2. Fracture management in animals (86.67) 3. Laboratory diagnosis of animal diseases and zoonosis (86.15) 4. Laboratory diagnosis of common cutaneous diseases of animals (82.56)
Relevant	Nil
Some what relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 28 reveals that all the training programmes conducted by IVRI, viz., advances in clinical diagnosis and therapy in veterinary medicine (93.59 per cent), fracture management in animals (86.67 per cent), laboratory diagnosis of animal diseases and zoonosis (86.15 per cent) and laboratory diagnosis of common cutaneous disease of animals (82.56 per cent) were perceived by respondents as highly relevant.

Table 29. Relevancy of training programme organised by IMG

Relevancy of the training programme	Name of the training programme
Highly relevant	1. Induction and orientation programme for newly recruited veterinary surgeons (94.61)* 2. Windows 95 and MS Office 97 for senior or middle level officers (89.23) 3. Management information system for officers of AHD (88.46) 4. Management in government for senior/ middle level officers (87.95) 5. Computer aided project management (87.18) 6. Office automation (87.18) 7. Project management for AHD (87.18) 8. Windows 98 and MS Office 97 (86.67) 9. Decentralised planning (83.84) 10. MS Access for senior officers (83.33) 11. Planning and management of integrated farming (81.79)
Relevant	1. Management skills for rural development (79.23) 2. Leadership training for women (79.23) 3. Training of trainers for rural development (77.69) 4. Monitoring and evaluation of rural development projects (76.67) 5. Assertiveness for women executives (75.38) 6. Life skills development for women (74.61) 7. Rural marketing management (73.33) 8. Behavioural dimensions of rural development projects (72.05) 9. Management of environment (72.05) 10. Economic reforms issues in development administration (71.28) 11. Proactive roles of housewife in society (71.02)
Some what relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 29 reveals that among the training programmes conducted by IMG, the highly relevant ones, as perceived by the respondents, were viz., induction and orientation programme for newly recruited veterinary surgeons (94.61 per cent), windows 95 and MS Office 97 for senior or middle level officers (89.23 per cent), management information system for officers of AHD (88.46 per cent), management in government for senior/ middle level officers (87.95 per cent), computer aided project management (87.18 per cent), office automation (87.18 per cent), project management for AHD (87.18 per cent), Windows 98 and MS Office 97 (86.67 per cent), decentralised planning (83.84 per cent), MS Access for senior officers (83.33 per cent), and planning and management of integrated farming (81.79 per cent).

The training programmes perceived as relevant were management skills for rural development projects (79.23 per cent), leadership training for women (79.23 per cent), training of trainers for rural development (77.69 per cent), monitoring and evaluation of rural development projects (76.67 per cent), assertiveness for women executives (75.38 per cent), life skills development for women (74.61 per cent), rural marketing management (73.33 per cent), behavioural dimensions of rural development (72.05 per cent), management of environment (72.05 per cent), economic reforms issues in development administration (71.28 per cent) and proactive roles of housewife in society (71.02 per cent).

None of the training programmes was perceived as either somewhat relevant or irrelevant.

Table 30. Relevancy of CVE programmes proposed by VCI – skilled/ specific technology courses

Relevancy of the CVE programme	Name of the CVE programme
Highly relevant	1. Veterinary and medical diagnostic technologies (94.10)
	2. Obstetrical practice (94.10)
	3. Gynaecological practice (93.33)
	4. Small animal surgery (92.31)
	5. Pet animal practice (91.79)
	6. Ruminants surgery (91.54)
	7. Ruminant medicine (90.51)
	8. Rabies control (89.23)
	9. Livestock emergency disease control and management (89.23)
	10. Computer assisted data handling (88.20)
	11. Milk hygiene (86.41)
	12. Dairy production and management (86.41)
	13. Disease surveillance (86.15)
	14. Clinical parasitology (85.64)
	15. Poultry pathology (85.38)
	16. Anaesthesiology (84.87)
	17. Chemical restraint of wild and zoo animals (84.36)
	18. Veterinary dermatology (84.36)
	19. Meat hygiene (83.85)
	20. Necropsy and hygienic disposal of carcases (83.33)
	21. Embryo transfer technology (83.07)
	22. Wild animal diseases (82.82)
	23. Swine production and management (82.82)
	24. Brucellosis control (82.05)
	25. Artificial insemination (82.05)
	26. Veterinary service management (81.28)

Relevancy of the CVE programme	Name of the CVE programme
Relevant	1. Commercial broiler – production and management (80.00) 2. Slaughter house and animal by products technology (79.74) 3. Poultry processing technology (78.97) 4. Commercial layer – production and management (78.72) 5. Commercial hatchery – production and management (78.72) 6. Meat processing technology (78.72) 7. Clinical biochemistry (77.72) 8. Tuberculosis control (76.72) 9. Commercial duck production and management (76.67) 10. Project and manpower planning (75.90) 11. Applied immunology for veterinary investigation (75.90) 12. Quail production and management (74.87) 13. Veterinary ethology and animal welfare (74.87) 14. Feed formulation (74.87) 15. Veterinary economics (73.33) 16. Turkey production and management (71.02) 17. Feed analysis (69.74) 18. Drug and pesticides assay (69.49) 19. Feed technology (65.89) 20. Equine practice (69.33)
Some what relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 30 reveals that among the skilled specific technology CVE courses proposed by VCI, the highly relevant ones as

perceived by the respondents, were viz., veterinary medical diagnostic technologies (94.10 per cent), obstetrical practice (94.10 per cent), gynaecological practice (93.33 per cent), small animal surgery (92.31 per cent), pet animal practice (91.79 per cent), ruminants surgery (91.54 per cent), ruminant medicine (90.51 per cent) rabies control (89.23 per cent), livestock emergency disease control and management (89.23 per cent), computer assisted data handling (88.20 per cent), milk hygiene (86.41 per cent), dairy production and management (86.41 per cent), disease surveillance (86.15 per cent), clinical parasitology (85.64 per cent), poultry pathology (85.38 per cent), anaesthesiology (84.87 per cent), chemical restraint of wild and zoo animals (84.36 per cent), veterinary dermatology (84.36 per cent), meat hygiene (83.85 per cent), necropsy and hygienic disposal of carcases (83.33 per cent), embryo transfer technology (83.07 per cent), wild animal diseases (82.82 per cent), swine production and management (82.82 per cent), brucellosis control (82.05 per cent), artificial insemination (82.05 per cent) and veterinary service management (81.28 per cent).

The CVE programmes perceived as relevant were commercial broiler – production and management (80.00 per cent), slaughter house and animal by products technology (79.74 per cent), poultry processing technology (78.97 per cent), commercial layer – production and management (78.72 per cent), commercial hatchery – production and management (78.72 per cent), meat processing

technology (78.72 per cent), clinical biochemistry (77.72 per cent), tuberculosis control (76.72 per cent), commercial duck production and management (76.67 per cent), project and manpower planning (75.90 per cent), applied immunology for veterinary investigation (75.90 per cent), quail production and management (74.87 per cent), veterinary ethology and animal welfare (74.87 per cent), feed formulation (74.87 per cent), veterinary economics (73.33 per cent), turkey production and management (71.02 per cent), feed analysis (69.74 per cent), drug and pesticides assay (69.49 per cent), feed technology (65.89 per cent) and equine practice (69.33 per cent).

None of the CVE programme was perceived as either somewhat relevant or irrelevant.

Table 31. Relevancy of CVE programmes proposed by VCI – short courses

Relevancy of the CVE programme	Name of the CVE programme
Highly relevant	1. Control of mastitis and current therapies (94.61)
	2. Fluid and electrolyte therapy in critical patients (93.59)
	3. Infertility in farm animals (92.56)
	4. Rumen medicine (92.31)
	5. Post mortem techniques and specimen despatch (91.02)
	6. Current treatment of skin diseases (90.02)
	7. Use of diagnostic kits for bacterial and viral diseases (90.00)
	8. Rumenotomy (89.94)

Relevancy of the CVE programme	Name of the CVE programme
	9. Use of diagnostic kits for protozoan diseases (88.46) 10. Treatment of prolapse in farm animals (87.69) 11. Primary care and external fixation in pets with fracture (87.18) 12. Laproscopy in small animals (86.15) 13. Laproscopy in large animals (82.82) 14. Primary care and external fixation in large animal fracture (82.31) 15. Handling of bio-materials, norms and regulation (82.05) 16. Resuscitation of critically ill-patients (small animals) (80.77) 17. Endoscopy in veterinary patients (80.51)
Relevant	1. Resuscitation of critically ill-patients (large animals) (75.38) 2. Tissue biopsy techniques (75.38) 3. Urethrotomy in male ruminants (74.36) 4. Electrocardiographic diagnosis (73.08) 5. Exfoliate cytology (70.77) 6. Ophthalmoscopy (69.74) 7. Dialysis in small animals (68.20) 8. Dialysis in large animals (61.79)
Some what relevant	Nil
Not relevant	Nil

* Values in parenthesis indicate percentage mean scores

Data in Table 31 reveals that among the proposed CVE short courses of technical competence development programmes, the highly relevant ones as perceived by the respondents, were viz.,

control of mastitis and current therapies (94.61 per cent), fluid and electrolyte therapy in critical patients (93.59 per cent), infertility in farm animals (92.56 per cent), rumen medicine (92.31 per cent), post mortem techniques and specimen despatch (91.02 per cent), current treatment of skin diseases (90.02 per cent), use of diagnostic kits for bacterial and viral diseases (90.00 per cent), rumenotomy (89.74 per cent), use of diagnostic kits for protozoan diseases (88.46 per cent), treatment of prolapse in farm animals (87.69 per cent), primary care and external fixation in pets with fracture (87.18 per cent), laproscopy in small animals (86.15 per cent), laproscopy in large animals (82.82 per cent), primary care and external fixation in large animal fracture (82.31 per cent), handling of bio-materials, norms and regulation (82.50 per cent), resuscitation of critically ill-patients (small animals) 80.77 per cent) and endoscopy in veterinary patients (80.51 per cent).

The CVE programmes perceived as relevant were viz., resuscitation of critically ill-patients (large animals) (75.38 per cent), tissue biopsy techniques (75.38 per cent), urethrotomy in male ruminants (74.36 per cent), electrocardiographic diagnosis (73.08 per cent), exfoliate cytology (70.77 per cent), ophthalmoscopy (69.74 per cent), dialysis in small animals (68.20 per cent) and dialysis in large animals (61.79 per cent).

None of the CVE programmes was perceived as either somewhat relevant or irrelevant.

4.5 Preferred trainers, periodicity and duration for CVE programmes

Table 32. Preferred trainers for the CVE programme

n = 130

Sl. No	Subject matter areas	Experts from the organisation (AHD)		Experts from outside the organisation but within the state		Experts from outside the state	
		f	%	f	%	f	%
1.	Medicine	20	15.38	56	43.08	54	41.54
2.	Obstetrics & gynaecology	29	22.31	64	49.23	37	28.46
3.	Surgery	19	14.62	66	50.77	45	34.61
4.	Laboratory diagnosis	18	13.85	65	50.0	47	36.15
5.	Animal production	24	18.46	58	44.62	48	36.92
6.	Livestock product technology	16	12.31	53	40.77	61	46.92
7.	Extension	46	35.38	69	53.08	15	11.54
8.	Information technology	15	11.54	58	44.62	57	43.85
9.	Professional management	34	26.15	50	38.46	46	35.38
10.	Zoo and wild life	14	10.77	27	20.77	89	68.46

Data in the Table 32 reveals that out of the three options of trainers viz., experts from the organisation (AHD), from outside the organisation but within the state and from outside the state, the most preferred one was experts from outside the organisation but within the state in the case of subject matter areas viz., medicine, obstetrics and gynaecology, surgery, laboratory diagnosis, animal production, extension and information technology and professional management. The percentages of respondents preferring them were 43.08, 49.23, 50.77, 50.0, 44.62, 53.08, 44.62 and 38.46 per cent respectively. The most preferred trainer in the case of livestock products technology and zoo and wild life was one from outside the state, the respective percentage of respondents preferring it being 46.92 and 68.46 per cent.

Next to the experts from outside the organisation, the most preferred was experts from outside the state in the case of subject matter areas viz., medicine, obstetrics and gynaecology, surgery, laboratory diagnosis, animal production, information technology and professional management. The percentage of respondents preferring them were 41.54, 28.46, 34.61, 36.15, 36.92, 43.85 and 35.38 per cent respectively. In the case of subject matter areas viz., livestock products technology, and zoo and wild life, the experts from outside the organisation but within the state the respective percentage of respondents opting them being 40.77 per cent and 20.77 per cent were preferred next to the experts from

outside the organisation. In the case of extension the second preference was for experts from the organisation and the percentage of respondents preferring so were 35.38 per cent.

The least preferred trainers were experts from the organisation in the case of subject matter areas viz., medicine, obstetrics and gynaecology, surgery, laboratory diagnosis, animal production, livestock products technology, information technology, professional management and zoo and wild life. The respective percentages of respondents preferring them were 15.38, 22.31, 14.62, 13.85, 18.46, 12.31, 11.54, 26.15 and 10.77 per cent. For the subject extension, the least preferred was experts from outside the state and the percentage of respondents preferring it was 11.54 per cent.

Table 33 Preferred duration for a short term residential CVE training programme leading to a certificate

n =130

Sl. No	Duration	Frequency	Percentage
1.	2 days	1	0.77
2.	3 days	1	0.77
3.	7 days	26	20.00
4.	15 days	36	27.69
5.	10 days	9	6.92
6.	1 month	28	21.54
7.	6 weeks	1	0.77
8.	2 months	2	1.54
9.	3 months	14	10.77
10.	6 months	11	8.46
11.	1 year	1	0.77
Total		130	100.00

Table 33 indicates that 27.69 per cent of the respondents was in favour of a training programme of duration 15 days that lead to a certificate. This was followed by 21.54, 20.00, 10.77, 8.46, 6.92, 1.54, 0.77, 0.77, 0.77 and 0.77 per cent of respondents favouring respectively 1 month, 3 months, 6 months, 10 days, 2 months, 2 days, 3 days, 6 weeks, and 1 year duration respectively for training under CVE programme, that led to a certificate.

Table 34. Preferred duration for a short-term residential CVE training programme leading to a diploma

Sl. No	Duration	Frequency	Percentage
1.	15 days	2	1.54
2.	3 weeks	2	1.54
3.	1 month	18	13.85
4.	45 days	1	0.77
5.	2 months	5	3.85
6.	3 months	43	33.07
7.	6 months	22	16.92
8.	9 months	4	3.08
9.	10 months	2	1.54
10.	1 year	30	23.07
11.	2 years	1	0.77
Total		130	100.00

Table 34 indicates that 33.07 per cent of the respondents were in favour of a training programme of duration three months that led to a diploma. This was followed by 23.07, 16.92, 13.85, 3.85, 3.08, 1.54, 1.54, 1.54, 0.77 and 0.77 per cent of respondents favouring one year, six months, one month, two months, nine months, 15 days, three weeks, 10 months, 45 days and two years duration respectively for a training under CVE programme, that led to a diploma.

Table 35. Preferred periodicity of the training (CVE) programme for veterinary surgeons

n = 130

Duration of the training (CVE)	Periodicity of the training (CVE)			
	every 3 months	every 6 months	every year	more than a year
1-7 days	38 (29.33)*	46 (35.38)	44 (33.85)	2 (1.54)
8-14 days	2 (1.54)	41 (31.54)	73 (56.13)	14 (10.77)
14-30days	-	7 (5.39)	63 (48.46)	60 (46.15)
More than a month	-	-	16 (12.31)	114 (87.69)

* Figures in parenthesis indicates percentage

From Table 35 it can be seen that the most preferred periodicity of training of 1-7 days duration was six months as suggested by 35.38 per cent respondents followed by an year, three months and more than a year respectively by 33.85, 29.33 and 1.54 per cent respondents.

Regarding the training of 8-14 days duration the most preferred periodicity was one year as suggested by 56.13 per cent respondents followed by six months, more than a year and three months respectively by 31.54, 10.77 and 1.54 per cent respondents.

Regarding the training of 14 to 30 days duration the most preferred periodicity was one year as suggested by 48.46 per cent respondents followed by more than a year and six months respectively by 46.15 and 5.39 per cent respondents. None preferred for three months periodicity.

Regarding the training of more than a month the most preferred periodicity was more than a year as suggested by 87.69 per cent of the respondents followed by an year by 12.31 per cent respondents. None preferred for three months and six months periodicity.

4.6.1 Preference for post graduation as a part of CVE

Table 36 Distribution of respondents based on preference for post graduation programme as a part of CVE

n = 130

Sl. No	Category	Frequency	Percentage
1.	Yes	86	66.15
2.	No	44	33.85
	Total	130	100.00

It is evident from Table 36 that 66.15 per cent of the respondents preferred post graduation programme as a part of the CVE and the remaining 33.85 per cent did not prefer a post graduation programme as part of CVE.

Table 37. Preferred subject matter areas of specialisation

n = 130

Sl. No	Subject matter areas	f	%
1.	Clinical veterinary medicine & ambulatory clinical practice	34	26.14
2.	Veterinary gynaecology and obstetrics	26	20.00
3.	Veterinary anaesthesiology and veterinary surgery	14	10.76
4.	Laboratory diagnostic technology	8	6.15
5.	Administration & human resource management	7	5.38
6.	Animal reproduction technology	6	4.62
7.	Mass communication, Journalism & Extension	6	4.62
8.	Zoo/wildlife health care and management	6	4.62
9.	Veterinary biologicals and biotechnology	6	4.62
10.	Meat and meat products technology	5	3.85
11.	Veterinary public health	4	3.18
12.	Cattle production and management	3	2.31
13.	Veterinary epidemiology and preventive management	1	0.77
14.	Goat production and management	1	0.77
15.	Swine production and management	1	0.77
16.	Poultry production and management	1	0.77
17.	Lab animal production and management	1	0.77
18.	Veterinary radiology and orthopaedics	-	-
19.	Buffalo production and management	-	-
20.	Sheep production and management	-	-
21.	Elephant production and management	-	-
22.	Fodder and feed technology	-	-
23.	Equine production and management	-	-
24.	Ethology and animal welfare	-	-

Table 37 reveals that 26.14 per cent preferred clinical veterinary medicine and ambulatory clinical practice as the area of specialisation followed by 20.00, 10.76, 6.15, 5.38, 4.62, 4.62, 4.62, 4.62, 3.85, 3.18, 2.31, 0.77, 0.77, 0.77, 0.77 and 0.77 preferring veterinary gynaecology and obstetrics, veterinary anaesthesiology and veterinary surgery, laboratory diagnostic technology, administration and human resource management, animal reproduction technology, mass communication, journalism and extension, zoo/ wildlife health care and management, veterinary biologicals and biotechnology, meat and meat products technology, veterinary public health, cattle production and management, veterinary epidemiology and preventive management, goat production and management, swine production and management, poultry production and management, lab animal production and management respectively. Veterinary radiology and orthopaedics, buffalo production and management, sheep production and management, elephant production and management, fodder and feed technology, equine production and management and ethology and animal welfare areas were not preferred by the respondents.

4.7 Preferred mode of training and venue of training

Table 38 Preferred mode of training for the CVE training programme

n = 130

Sl. No	Subject matter areas	Distance learning (correspondence, website etc.)		Institutional (Face to face)		Integrated	
		f	%	f	%	F	%
1.	Medicine	7	5.38	88	67.69	35	26.92
2.	Obstetrics & gynaecology	1	0.77	103	79.23	26	20.00
3.	Surgery	-	-	114	87.69	16	12.31
4.	Laboratory diagnosis	10	7.69	92	70.77	28	21.54
5.	Animal production	35	26.92	57	43.85	38	29.23
6.	Livestock products technology	30	23.08	57	43.85	43	33.07
7.	Extension	69	53.08	26	20.0	35	26.92
8.	Information technology	35	26.92	55	42.31	40	30.77
9.	Professional management	52	40.00	44	33.85	34	26.15
10.	Zoo and wild life	10	7.69	75	57.69	45	34.61

Data in Table 38 reveals that out of the three modes of training viz., distance learning, institutional and integrated, the most preferred mode of training was institutional in the case of subject matter areas viz., medicine, obstetrics and gynaecology, surgery, laboratory diagnosis, animal production, livestock products technology, extension, information technology, professional management and zoo and wild life. The respective percentage of respondents preferring them were 67.69, 79.23, 87.69, 70.77, 43.85, 43.85, 20.0, 42.31, 33.85 and 57.69 per cent. The most preferred mode of training in the case of extension and professional management were distance learning and the percentage of respondents preferring it respectively were 53.08 per cent and 40.00 per cent.

Next to institutional mode of training, the most preferred mode of training was integrated mode of training in the case of subject matters areas like medicine, obstetrics and gynaecology, surgery, laboratory diagnosis, animal production, livestock product technology, extension, information technology, and zoo and wild life. The respective percentage of respondents preferring them was 26.92, 20.00, 12.31, 21.54, 29.23, 33.07, 26.92, 30.77, and 34.61 per cent. In the case of subject matters area professional management the second most preferred mode of training was institutional. The percentage of respondents preferring was 26.15 per cent.

The least preferred mode of training was distance learning in the case of subject matter areas viz., medicine, obstetrics and gynaecology, laboratory diagnosis, animal production, livestock products technology, information technology, and zoo and wild life. The respective percentage of respondents preferring them was 5.38, 0.77, 7.69, 26.92, 23.08, 26.92 and 7.69 per cent. In the case of subject matter areas of extension and professional management the least preferred modes of training were institutional and integrated respectively. The percentage of respondents preferring institutional training the least in the case of extension were 20 per cent and the percentage of respondents preferring integrated training the least in the case of professional management were 26.15 per cent.

Table 39 Preferred venues for short-term training

Sl. No	Subject matter areas	Veterinary college and other institutes of KAU		Institutes within Kerala other than KAU		Premier institutes outside Kerala	
		f	%	f	%	f	%
1.	Veterinary science	74	56.92	12	9.23	44	33.85
2.	Animal production	32	24.61	55	42.31	43	33.08
3.	Livestock products technology	60	46.15	31	23.85	39	30.00
4.	Extension	29	22.31	67	51.54	34	26.15
5.	Professional management	20	15.38	77	59.23	33	25.38
6.	Zoo and wildlife	14	10.77	56	43.07	60	46.15
7.	Biologicals	33	25.38	30	23.07	67	51.54
8.	Information technology	23	17.69	84	64.61	23	17.69

Data in Table 39 reveals that out of the three options of venues of training viz., veterinary college and institutions of KAU, institutes within Kerala, premier institutes outside Kerala the most preferred one was institutes within Kerala in the case of subject matter area viz., animal production, extension, professional management and information technology. The respective percentage of respondents preferring it was 42.31, 51.54, 59.23 and 64.61 per cent. The most preferred one in the case of veterinary science and livestock products technology was veterinary college and institutes of KAU. The percentage of respondents preferring it respectively was 56.92 and 46.15 per cent. The most preferred one in the case of zoo and wildlife and biologicals was premier institutions outside Kerala. The percentage of respondents preferring it respectively was 46.15 and 51.54 per cent.

Next to institutes within Kerala, the most preferred was premier institutes outside Kerala in the case of subject matter areas viz., animal production, extension, professional management and information technology. The respective percentage of respondents preferring them was 33.08, 26.15, 25.38 and 17.69 per cent. In the case of subjects, veterinary science and livestock products technology, the second most preferred venue for short term training was premier institute outside Kerala. The percentage of respondents preferring it respectively was 33.85 and 30.00 per cent. The second most preferred venue in the case of biological was veterinary college and institutes of KAU and the percentage of respondents preferring it was 25.38 per cent. Institutes of KAU including veterinary college

and premier institutes outside Kerala were opted each by 17.69 per cent of respondents as their second most preferred venue for information technology.

The least preferred venue for short-term training was veterinary college and institutes of KAU in the case of subjects viz., animal production, extension, professional management and information technology. The respective percentage of respondents preferring them was 24.61, 22.31, 15.38 and 10.77 per cent. For the subject veterinary science, livestock products technology and biologicals the least preferred was institutes within Kerala. The percentage of respondents opting it was 9.23, 23.85 and 23.01 per cent respectively.

Table 40 Preferred venues for long-term training

n = 130

Sl. No	Subject matter areas	Veterinary college and other institutes of KAU		Institutes within Kerala other than KAU		Premier institutes outside Kerala	
		F	%	f	%	F	%
1.	Veterinary science	38	29.23	6	4.61	86	66.15
2.	Animal production	25	19.23	28	21.54	77	59.23
3.	Livestock products technology	37	28.46	19	14.62	74	56.92
4.	Extension	24	18.46	33	25.39	73	56.15
5.	Professional management	14	10.77	53	40.77	63	48.46
6.	Zoo and wildlife	7	5.38	26	20.00	98	75.39
7.	Biological	8	6.15	13	10.00	109	83.85
8.	Information technology	13	10.00	60	46.15	57	43.85

Data in Table 40 reveals that out of the three options of venues of training viz., Veterinary college and institutes of KAU, institutes within Kerala and premier institutes outside Kerala the most preferred one for long-term training was premier institutes outside Kerala in the case of subject matter areas viz., veterinary science, animal production, livestock products technology, extension, professional management, zoo and wild life and biologicals. The respective percentage of respondents preferring it was 66.15, 59.23, 56.92, 56.15, 48.46, 75.39 and 83.85 per cent. The most preferred one in the case of information technology was institutes within Kerala and the percentage of respondents preferring were 46.15 per cent.

Next to institutes outside Kerala, the most preferred one was institutes within Kerala in the case of subjects viz., animal production, extension, professional management, zoo and wild life and biologicals. The respective percentage of respondents preferring it was 21.54, 25.39, 40.77, 20.00 and 10.00 per cent. In the case of subjects viz., veterinary science and livestock products technology it were veterinary college and other institutes of KAU. The percentage of respondents opting them was 29.23 and 28.46 per cent respectively. In the subject matter area of information technology the second most preferred venue for training was premier institutes outside Kerala and the percentage of respondents preferring so was 43.85 per cent.

The least preferred venue for long-term training was veterinary college and institutes of KAU in the case of subject matter areas viz., animal production, extension, professional management, zoo and wild life, biologicals and information technology. The respective percentage of respondents preferring them was 19.23, 18.46, 10.77, 5.38, 6.15 and 10.00 per cent. For the subject matter areas veterinary science and livestock products technology the least preferred was institutes within Kerala, the percentage of respondents opting it being respectively 4.61 and 14.62 per cent.

4.8 Task analysis

4.8.1 Medical tasks

Table 41 Analysis of the frequency of performance of medical tasks

5 most frequent tasks	Mean score	5 least frequent tasks	Mean score
1. Administration of medicines	4.66	1. Ophthalmoscopy	1.03
2. Clinical examination of animals	4.22	2. Laryngoscopy	1.07
3. Management of mastitis	3.94	3. Collection of CSF	1.10
4. Fluid therapy	3.77	4. Otoscopy	1.16
5. Dietary support for various conditions	3.71	5. Blood transfusion	1.21

The frequency analysis of the medical tasks showed mean scores ranging from 4.66 to 1.03. The most frequently

performed tasks were administration of medicines, clinical examination of animals, management of mastitis, fluid therapy and dietary support for various conditions. Their mean scores for frequency of performance were 4.66, 4.22, 3.94, 3.77 and 3.71 respectively. The least frequent tasks were ophthalmoscopy, laryngoscopy, collection of CSF, otoscopy and blood transfusion. Their mean scores for frequency of performance were 1.03, 1.07, 1.10, 1.16 and 1.21 respectively.

Table 42 Analysis of the perceived importance of the medical tasks

5 most important tasks	Mean score	5 least important tasks	Mean score
1. Management of mastitis	2.90	1. Laryngoscopy	1.37
2. Administration of medicines	2.81	2. Ophthalmoscopy	1.38
3. Fluid therapy	2.67	3. Collection of CSF	1.41
4. Clinical signs of various types of poisoning and its management	2.66	4. Lumbar puncture	1.51
5. Clinical examination of animals	2.63	5. Biopsy	1.61

The analysis of the perceived importance of the medical tasks showed mean scores ranging from 2.90 to 1.37. The tasks that were rated as most important were management of mastitis, administration of medicines, fluid therapy, clinical signs of various types of poisoning and its management and clinical examination of

animals. Their mean scores for level of importance were 2.90, 2.81, 2.67, 2.66 and 2.63 respectively. The tasks that were rated as least important were laryngoscopy, ophthalmoscopy, collection of CSF, lumbar puncture and biopsy. Their mean scores for level of importance were 1.37, 1.38, 1.41, 1.51 and 1.61 respectively.

Table 43. Analysis of the perceived difficulty in the performance/ learning of medical tasks

5 most difficult tasks	Mean score	5 least difficult tasks	Mean score
1. Collection of CSF	2.90	1. Administration of medicines	1.14
2. Laryngoscopy	2.57	2. Fluid therapy	1.16
3. Biopsy	2.52	3. Clinical examination of animals	1.40
4. Ophthalmoscopy	2.39	4. Dietary support for various conditions	1.41
5. Lumbar puncture	2.31	5. Passing of stomach tube	1.69

The analysis of the perceived difficulty in the performance/ learning of medical tasks by the respondents showed the mean scores of medical tasks ranging from 2.90 to 1.14. The tasks that were rated as most difficult were collection of CSF, laryngoscopy, biopsy, ophthalmoscopy and lumbar puncture. Their mean scores for performance/ learning difficulty were 2.90, 2.57, 2.52, 2.39 and 2.31 respectively. The tasks that were rated as least difficult were administration of medicine, fluid therapy, clinical examination of animals, dietary support for various conditions and passing of

stomach tube. Their mean scores for performance/ learning difficulty were 1.14, 1.16, 1.40, 1.41 and 1.69 respectively.

Table 44. Overall scores of medical tasks

Sl. No.	Tasks	Overall score	Rank
1.	Management of mastitis	1025	1
2.	Administration of medicines	1000	2
3.	Clinical examination of animals	958	3
4.	Management of dermatological conditions	928	4
5.	Dietary support for various conditions	892	5
6.	Fluid therapy	882	6
7.	Clinical signs of various type of poisoning and its management	831	7
8.	Critical care technique	806	8
9.	Passing of stomach tube	664	9
10.	Urethral catheterisation	634	10
11.	Blood transfusion	629	11
12.	Collection of CSF	628	12
13.	Biopsy	625	13
14.	Allergic test	608	14
15.	Lumbar puncture	596	15
16.	Otoscopy	588	16
17.	Laryngoscopy	581	17
18.	Ophthalmoscopy	558	18

It is evident from Table 44 that management of mastitis was ranked first among the various medical tasks, followed by administration of medicines, clinical examination of animals, management of dermatological conditions, dietary support for various conditions, fluid therapy, clinical signs of various type of poisoning and its management, critical care technique, passing of stomach tube, urethral catheterisation, blood transfusion, collection of CSF, biopsy, allergic test, lumbar puncture, otoscopy, laryngoscopy and ophthalmoscopy.

4.8.2 Surgical tasks

Table 45. Analysis of the frequency of performance of surgical tasks

5 most frequent tasks	Mean score	5 least frequent tasks	Mean score
1. Local anaesthesia	2.76	1. Surgical management of cataract	1.04
2. Suturing techniques	2.62	2. Neurectomy	1.07
3. Techniques for control of haemorrhage	2.46	3. Extraction of tooth	1.07
4. Post operative management	2.38	4. Tenotomy	1.11
5. Castration and vasectomy	2.32	5. Amputation of limb	1.16

Analysis of frequency performance of the surgical tasks showed mean scores ranging from 2.76 to 1.04. The most frequently performed tasks were local anaesthesia, suturing techniques,

techniques for control of haemorrhage, postoperative management and castration and vasectomy. Their mean scores for frequency of performance were 2.76, 2.62, 2.46, 2.38 and 2.32 respectively. The least frequently performed tasks were surgical management of cataract, neurectomy, extraction of tooth, tenotomy and amputation of limb. Their means scores for performance were 1.04, 1.07, 1.07, 1.11 and 1.16 respectively.

Table 46. Analysis of perceived importance of the surgical tasks

5 most important tasks	Mean score	5 least important tasks	Mean score
1. Techniques for control of haemorrhage	2.72	1. Extraction of tooth	1.45
2. Post operative management	2.66	2. Ear cropping	1.47
3. Udder and teat surgery	2.59	3. Neurectomy	1.53
4. Treatment of fracture	2.59	4. Tenotomy	1.58
5. Suturing techniques	2.55	5. Amputation of limb	1.60

The analysis of the perceived importance of the surgical tasks showed mean scores ranging from 2.72 to 1.45. The tasks rated as most important were techniques for control of haemorrhage, postoperative management, udder and teat surgery, treatment of fracture and suturing techniques. Their mean scores for level of importance were 2.72, 2.66, 2.59, 2.59 and 2.55 respectively. The

surgical tasks rated as least important were extraction of tooth, ear cropping, neurectomy, tenotomy and amputation of limbs. Their mean scores for level of importance were 1.45, 1.47, 1.53, 1.58 and 1.60 respectively.

Table 47. Analysis of the perceived difficulty in the performance/ learning of surgical tasks

5 most difficult tasks	Mean score	5 least difficult tasks	Mean score
1. Surgical management of cataract	2.97	1. Local aesthesia	1.20
2. Urethrotomy	2.78	2. Docking	1.30
3. Neurectomy	2.64	3. Castration and vasectomy	1.43
4. Amputation of limb	2.63	4. Epidural anaesthesia	1.44
5. Correction of dislocation	2.57	5. Techniques for control of haemorrhage	1.69

The analysis of the perceived difficulty performance/ learning of surgical tasks by the respondents showed the mean scores of surgical tasks ranging from 2.97 to 1.20. The tasks rated as most difficult were surgical management of cataract, urethrotomy, neurectomy, amputation of limb and correction of dislocation. Their mean scores for performance/ learning difficulty were 2.97, 2.78, 2.64, 2.63 and 2.57 respectively. The tasks rated as least difficult were local anaesthesia, docking, castration and vasectomy, epidural anaesthesia and techniques for control of haemorrhage. Their mean scores for performance/learning difficulty were 1.20, 1.30, 1.43, 1.44 and 1.69 respectively.

Table 48. Overall scores of surgical tasks

n = 116

Sl. No.	Tasks	Overall score	Rank
1.	Udder and teat surgery	807	1
2.	Post operative management	802	2
3.	Treatment of fracture	796	3
4.	Techniques for control of haemorrhage	786	4
5.	Correction of dislocation	781	5
6.	Suturing technique	767	6
7.	Road accident traumas	760	7
8.	Local anaesthesia	744	8
9.	General anaesthesia	742	9
10.	Lameness	740	10
11.	Epidural anaesthesia	729	11
12.	Rumenotomy	724	12
13.	Managing anaesthetic hazards	722	13
14.	Reduction of hernia	720	14
15.	Patellar desmotomy	697	15
16.	Castration and vasectomy	682	16
17.	Urethrotomy	682	16
18.	Removal of tumor	681	17
19.	Atresia ani	679	18
20.	Spaying	676	19
21.	GI tract surgical conditions	676	19
22.	Amputation of horn	658	20
23.	Surgical management of cataract	657	21
24.	Amputation of limb	626	22
25.	Paravertebral nerve block	615	23
26.	Cornual nerve block	614	24
27.	Docking	612	25
28.	Zepp's operation	608	26
29.	Neuorectomy	607	27
30.	Tenotomy	597	28
31.	Extraction of tooth	586	29
32.	Ear cropping	562	30

It is evident from Table 48 that udder and teat surgery was ranked first among the surgical tasks followed by post operative management, treatment of fracture, techniques for control of haemorrhage, correction of dislocation, suturing techniques, road accident traumas, local anaesthesia, general anaesthesia, lameness, epidural anaesthesia, rumenotomy, managing anaesthetic hazards, reduction of hernia, patellar desmotomy, castration and vasectomy, urethrotomy, removal of tumor, atresia ani, spaying, GI tract surgical conditions, amputation of horn, surgical management of cataract, amputation of limb, paravertebral nerve block, cornual nerve block, docking, zepp's operation, neuorectomy, tenotomy, extraction of tooth and ear cropping.

4.8.3 Obstetrics and gynaecological tasks

Table 49. Analysis of frequency performance of obstetrics and gynaecological tasks

5 most frequent tasks	Mean score	5 least frequent tasks	Mean score
1. Artificial insemination in cattle	4.84	1. Artificial insemination in bitch	1.01
2. Handling of frozen semen	4.64	2. Vaginal cytology in bitch.	1.06
3. Pregnancy diagnosis in cattle	3.64	3. Artificial insemination in goats	1.11
4. Detecting abnormalities of uterus, ovary, corpus luteum, follicle	3.34	4. Cystic ovary removal	1.29
5. Retained fetal membranes	3.20	5. Estrous induction in bitch	1.41

The analysis of frequency of performance of the obstetrics and gynaecological tasks showed mean scores ranging from 4.84 to 1.01. The most frequently performed tasks were artificial insemination in cattle, handling of frozen semen, pregnancy diagnosis in cattle, detecting abnormalities of uterus, ovary, corpus luteum, follicle and retained fetal membranes. Their mean scores for frequency of performance were 4.84, 4.64, 3.64, 3.34 and 3.20 respectively. The least frequently performed tasks were artificial insemination in bitch, vaginal cytology in bitch, artificial insemination in goats, cystic ovary removal and estrous induction in bitch their mean scores for frequency of performance being 1.01, 1.06, 1.11, 1.29 and 1.41 respectively.

Table 50. Analysis of the perceived importance of the obstetrics and gynaecological tasks

5 most important tasks	Mean score	5 least important tasks	Mean score
1. Artificial insemination in cattle	2.97	1. Vaginal cytology in bitch	1.44
2. Pregnancy diagnosis in cattle	2.94	2. Artificial insemination in bitch.	1.61
3. Detecting abnormalities of uterus, ovary, corpus luteum, follicle	2.93	3. Estrous induction in bitch	1.73
4. Prolapse of uterus	2.92	4. Artificial insemination in goats	1.83
5. Dystocia	2.90	5. Episiotomy	1.96

The analysis of the perceived importance of the obstetrics and gynaecological tasks showed mean scores ranging from 2.97 to 1.47. The tasks rated as most important were artificial insemination in cattle, pregnancy diagnosis in cattle, detecting abnormalities of uterus, ovary, corpus luteum, follicle, prolapse of uterus and dystocia. Their mean scores for level of importance were 2.97, 2.94, 2.93, 2.92 and 2.90 respectively. The tasks rated as least important were vaginal cytology in bitch, artificial insemination in bitch, estrous induction in bitch, artificial insemination in goats and episiotomy. Their mean scores for level of importance were 1.47, 1.61, 1.73, 1.83 and 1.96 respectively.

Table 51. Analysis of the perceived difficulty in the performance/ learning of obstetrics and gynaecological tasks

5 most difficult tasks	Mean score	5 least difficult tasks	Mean score
1. Cystic ovary removal	2.56	1. Artificial insemination in cattle	1.08
2. Artificial insemination in bitch	2.53	2. Handling of frozen semen	1.21
3. Pregnancy diagnosis in bitch	2.53	3. Pregnancy diagnosis in cattle	1.22
4. Vaginal cytology in bitch	2.38	4. Retained fetal membrames	1.37
5. Pregnancy diagnosis in goats	2.29	5. Induction of parturition	1.56

The analysis of the perceived difficulty performance/ learning of the obstetrics and gynaecological tasks by the

respondents showed the mean scores of obstetrics and gynaecological tasks ranging from 2.56 to 1.08. The tasks rated as most difficult were cystic ovary removal, artificial insemination in bitch and pregnancy diagnosis in bitch, vaginal cytology in bitch, pregnancy diagnosis in goats. The mean scores for performance/ learning difficulty of these tasks were 2.56, 2.53, 2.53, 2.38 and 2.29 respectively. The tasks rated as least difficult were artificial insemination in cattle, handling of frozen semen, pregnancy diagnosis in cattle, retained fetal membranes and induction of parturition. The mean scores for performance/ learning difficulty of these tasks were 1.08, 1.21, 1.22, 1.37 and 1.56 respectively.

Table 52. Overall scores of obstetrics and gynaecological tasks

n = 116

Sl. No.	Tasks	Overall score	Rank
1.	Artificial insemination in cattle	1032	1
2.	Handling of frozen semen	1007	2
3.	Pregnancy diagnosis in cattle	986	3
4.	Detecting abnormalities of utreus, ovary, corpus luteum, follicle	977	4
5.	Dystocia	879	5
6.	Prolapse of uterus	850	6
7.	Retained fetal membranes	840	7
8.	Caesarean	797	8
9.	Hormonal therapy in infertility	775	9
10.	Pregnancy diagnosis in goats	761	10
11.	Pregnancy diagnosis in bitch	707	11
12.	Induction of parturition	693	12
13.	Cystic ovary removal	676	13
14.	Episiotomy	614	14
15.	Estrous induction in bitch	610	15
16.	Artificial insemination in bitch	598	16
17.	Vaginal cytology in bitch	571	17
18.	Artificial insemination in goats	561	18

It is evident from Table 52 that among the obstetrics and gynaecological tasks artificial insemination in cattle was ranked first followed by handing of frozen semen, pregnancy diagnosis in cattle, detecting abnormalities of utreus, ovary, corpus luteum, follicle, dystocia, prolapse of uterus, retained fetal membranes, caesarean, hormonal therapy in infertility, pregnancy diagnosis in goats, pregnancy diagnosis in bitch, induction of parturition, cystic ovary removal, episiotomy, estrous induction in bitch, artificial insemination in bitch, vaginal cytology in bitch and artificial insemination in goats.

4.8.4 Laboratory diagnosis tasks

Table 53. Analysis of the frequency of performance of laboratory diagnosis tasks

5 most frequent tasks	Mean score	5 least frequent tasks	Mean score
1. Faecal examination	3.46	1. Ultrasonography	1.0
2. Examination of milk samples	3.20	2. Electrocardiography	1.02
3. Maintenance of laboratory equipments	3.04	3. Fluorescent antibody technique	1.13
4. Urine analysis	2.61	4. Detection of aflatoxin	1.29
5. Collection and despatch of specimen for microbiological and pathological examination	2.47	5. Liver function test	1.42

Analysis of the frequency of performance of the laboratory diagnosis tasks showed the mean scores ranging from 3.46 to 1.10. The most frequently performed tasks were faecal examination, examination of milk samples, maintenance of laboratory equipments, urine analysis, collection and despatch of specimen for microbiological and pathological examination. Their mean scores for frequency of performance were 3.46, 3.20, 3.04, 2.61 and 2.47 respectively. The least frequently performed tasks were ultrasonography, electrocardiography, fluorescent antibody technique, detection of aflatoxin and liver function test. Their mean scores for performance were 1.0, 1.02, 1.13, 1.29 and 1.42 respectively.

Table 54. Analysis of the perceived importance of the laboratory diagnosis tasks

5 most important tasks	Mean score	5 least important tasks	Mean score
1. Examination of milk samples	2.67	1. Ultrasonography	1.79
2. Maintenance of laboratory equipments	2.55	2. Electrocardiography	1.79
3. Faecal examination	2.54	3. Fluorescent antibody technique	1.88
4. Collection and despatch of specimen for microbiological and pathological examination	2.49	4. Liver function test	2.09
5. Cultural and antibiotic sensitivity test.	2.45	5. Detection of aflatoxin	2.11

The analysis of the perceived importance of the laboratory diagnosis tasks showed the mean scores ranging from 2.90 to 1.38. The tasks rated as most important were examination of milk samples, maintenance of laboratory equipments, faecal examination, collection and despatch of specimen for microbiological and pathological examination and cultural and antibiotic sensitivity test. Their mean scores for level of importance were 2.67, 2.55, 2.54, 2.49 and 2.45 respectively. The tasks rated as least important were ultrasonography, electrocardiography, fluorescent antibody technique, liver function test, and detection of aflatoxin. Their mean scores for level of importance were 1.79, 1.79, 1.88, 2.09 and 2.11 respectively.

Table 55. Analysis of the perceived difficulty in the performance/ learning of laboratory diagnosis tasks

5 most difficult tasks	Mean score	5 least difficult task	Mean score
1. Ultrasonography	3.01	1. Faecal examination	1.21
2. Electrocardiography	3.0	2. Examination of milk samples	1.33
3. Fluorescent antibody technique	2.68	4. Urine analysis	1.46
4. Detection of aflatoxin	2.62	5. Collection and despatch of specimen for micro-biological and pathological examination	1.64
5. Liver function test	2.32	3. Maintenance of laboratory equipments	1.67

Analysis of the perceived difficulty performance/ learning of laboratory diagnosis tasks showed the mean scores

ranging from 3.01 to 1.21. The tasks rated as most difficult were ultrasonography, electrocardiography, fluorescent antibody technique, detection of aflatoxin, liver function test. The mean scores for performance/ learning difficulty were 3.01, 3.0, 2.68, 2.62 and 2.32 respectively. The tasks rated as least difficult were faecal examination, examination of milk, urine analysis, collection and despatch of specimen for microbiological and pathological examination and maintenance of laboratory equipments. The mean scores for performance/ learning difficulty were 1.21, 1.33, 1.46, 1.64 and 1.67 respectively.

Table 56 Overall scores of laboratory diagnosis tasks

n = 76

Sl. No.	Tasks	Overall score	Rank
1.	Maintenance of laboratory equipments	552	1
2.	Faecal examination	548	2
3.	Examination of milk samples	547	3
4.	Cultural and antibiotic sensitivity test	510	4
5.	Collection and despatch of specimen for microbiological and pathological examination	502	5
6.	Urine analysis	492	6
7.	Haemtology	479	7
8.	Serological test	462	8
9.	Detection of aflatoxin	458	9
10.	Liver function test	443	10
11.	Electrocardiography	442	11
12.	Ultrasonography	441	12
13.	Fluorescent antibody technique	433	13

It is evident from Table 56 among the laboratory diagnosis tasks maintenance of laboratory equipments was ranked first followed by faecal examination, examination of milk samples, cultural and antibiotic sensitivity test, collection and despatch of specimen for microbiological and pathological examination, urine analysis, haematology, serological test, detection of aflatoxin, liver function test, electrocardiography, Ultrasonography and fluorescent antibody technique.

Discussion

5. DISCUSSION

The results of the study are discussed under the following headings.

5.1 Personal profile

5.2 Training needs in major subject matter areas

5.3 Correlation of the socio-personal characteristics of veterinary surgeons and their training needs

5.4 Relevancy rating of the training programmes

5.5 Preferred duration, periodicity trainers, venue of training and preferred subject matter areas for specialisation

5.6 Task analysis

5.1 Personal profile

Since the study was confined to the entry cadre of veterinary surgeons most of them were of 31 to 35 years age. As a reflection of the higher population size of gent veterinarians to lady veterinarians most of the respondents fell under the former category. Many were married with a single child and the age of the youngest child in most cases was below three years. Nuclear families abound though there were few joint families, which reflects the general nature of the social life of Kerala.

Among the veterinary surgeons studied, only few were postgraduates as most of the respondents might have entered into government service after graduation. The early induction into service was further evidenced by six to ten years of professional experience. Majority were working in home districts, which meant getting posting in the home district was not that difficult. However, most of them commuted less than 50kms daily.

Most of the respondents had attended five or less than five seminars as seminars were being organised by Indian Veterinary Association frequently and they read up to three journals and three periodicals. The finding about the reading habit of veterinary surgeons was one similar to the findings of Sudeep Kumar (1999). Though most of the veterinary surgeons had attended up to five trainings, some veterinary surgeons had not attended any training. This points out to the need of a policy change in the selection strategy of candidates for training.

5.2 Training need in major subject matter areas

The comparatively higher preference for training in the subject matter areas of zoo and wild life, information technology and veterinary medicine could be due to their contemporary importance and also due to the lesser exposure of the veterinary surgeons to these subjects especially zoo and wild life and information technology during their graduation studies. Further, the importance given to

veterinary medicine for a knowledge based training and surgery for a skill based training could be because of the immediate relevance of these subject matter areas to their job as most of the respondents were clinical practitioners. The higher need for training in surgery and medicine was also observed by Krishnaraj (1974) and Sudeep Kumar (1999).

5.2.1 Zoo and wild life

It might be due to the higher population of domesticated elephants in Kerala and the demand upon the veterinary surgeons to treat them as well as the zoo or wild animals that the respondents assigned comparatively more importance to the subject matter areas of management of domesticated elephants, chemical immobilisation of wild animals and diagnosis and treatment of wild life diseases. The importance given to the knowledge aspect of the chemical immobilisation of wild animals and diagnosis of treatment of wild life disease as well as the skill aspect in the management of domesticated elephants indicated the need to emphasize the knowledge and skill aspects respectively while organising the training programmes in these areas.

5.2.2 Information Technology

The high preference of the veterinary surgeons for training in both the knowledge and skill aspects of using computer in

office might be due to the on going computerisation of the Animal Husbandry Department. The importance given to the training need for knowledge on the basics of computer and skill in using the computer in office by the respondents indicates the significance of giving due weightage to the concerned aspect (knowledge or skill) while organising training programmes in the respective areas.

5.2.3 Veterinary medicine

It was only quite natural that the veterinarians preferred to gain more proficiency in emerging diseases of livestock and poultry as measures for treatment and control were significant. Probably this could be the reason why the respondents preferred modern diagnostic procedures, diagnosis, treatment and control of emerging diseases of livestock as well as poultry were perceived as comparatively important to CVE training programme under the domain of veterinary medicine.

5.2.4 Surgery

Under surgery, small animal surgery, anaesthetics and anaesthesia and orthopaedics were assigned comparatively higher priority by the veterinary surgeons as far as the training needs are concerned. This might be because of increasing importance of performing surgery pertaining to small animals and frequent reporting of orthopaedic cases such as fractures, dislocation etc., in the hospitals.

For knowledge based training, anaesthetics and anaesthesia was emphasised the most while for a skill based training small animal surgery was preferred the most by the respondents probably because the knowledge of dose, administration, anaesthesia maintenance, revival etc., and skills in performing small animal surgery were perceived equally relevant by them. Similar findings have been reported by Sharma and Singh (1968).

5.2.5 Extension

The responsibilities assigned to the veterinary surgeons in the implementation of people's plan campaign which involved teaching, training and planning activities might be the reason for the respondents giving comparatively higher priorities to the areas viz., modern extension teaching methods, advanced training methods and HRD and project formulation, implementation and evaluation under the major domain of extension. The need for training in the above subject matter areas has also been reported by Haim and Islam (1973) Mani (1974), Krishnaraj (1975), Sandhu and Bilang (1977), Devindra and Auditya (1986), Shrestha (1983) and Subbiah and Raju (1994).

5.2.6 Livestock products technology

The comparatively higher priorities assigned by the veterinarians to the quality assurance of meat and meat products,

food borne infections and intoxications and wholesome meat production might be because of the relevance of the scientific aspects of these areas from the public health point of view. The importance given to the knowledge of treatment and disposal of slaughter house by-products and condemned materials might be due to the ever increasing environmental pollution concern and the need to give proper advice in this regard to the entrepreneurs and the public at large. Similarly the importance given to acquiring skill in the area of quality control of meat products by the veterinarians could be to equip themselves to train the entrepreneurs.

5.2.7 Obstetrics and gynaecology

The desire to keep abreast with the latest technologies and the problems and challenges put forth by infertility cases in the field might be the reason for the respondents assigning comparatively higher priorities to embryo transfer technology, infertility management in farm animals and hormones and their application in reproduction. It could be noted that the area of embryo transfer technology the veterinarians aspired both knowledge and skill oriented training. This points out the need of considering both knowledge and skill aspects while imparting training in this area. The need for training in infertility cases is in agreement with the findings of Sudeep Kumar (1999).

5.2.8 Professional management

Training on Service rules and regulations from the perspective of both knowledge and skill was highly preferred by the respondents possibly because the respondents studied were juniors in service and so they required more training in the area of service rules and regulations. Similar findings have been also reported by Sandhu and Bilang (1977).

5.2.9 Animal production

The breeding and management of pet animals as well as meat production have gained importance in the changing socio-economic scenario of Kerala. It could be observed that the priority areas of the veterinarians for training under the Animal Production were breeding and management of pet animals, production of meat animals and swine production and management. This reinforces relevance of imparting training in these areas under the continuing veterinary educations for the veterinarians.

5.3 Correlation between the socio-personal characteristics of veterinary surgeons and their training need in terms of knowledge and skill in different subject matter areas

From the finding that there was no correlation between any of the independent variables and the perceived training need in

terms of either knowledge and skill separately or both of them put together it could be assumed that none of the independent variables studied were important to the perception of the need for training.

The non-significant association between age and the training need has been in agreement with the findings of Rajendran (1978), Shrestha (1983), Gharu (1989) and it is against the findings of Krishnaraj (1975), Kalita and Sarmah (1999).

The observation that marital status had no significant relationship with training need has been in agreement with the findings of Rajendran (1978) and Mani (1996).

The non-significant association between educational qualification and the training need is in accordance with the findings of Rajendran (1978), Shrestha (1983), Kalita and Sharmah (1999) and is against the findings of Ravi (1991).

The findings that professional experience had a non-significant association with the training need is in accordance with the findings of Sharma (1966), Shrestha (1983), Gharu (1989) and in contradiction with the findings of Krishnaraj (1975), Rajendran (1987), Mani (1996), Kalita and Sarmah (1999).

The non-significant association between training underwent and training need is in agreement with the findings of Rajendran (1978), Shrestha (1983), Gharu (1989) and in contradiction with the findings of Ravi (1991), Mani (1996) and Kalitha and Sarmah (1999).

5.4 Relevancy rating of the training programmes

The present study reveals that all the training programmes organised by the training organisations viz., Kerala Agricultural University, Kerala Livestock Development Board, Indian Veterinary Research Institute and Institute of Management in Government were rated as either highly relevant or relevant by the veterinary surgeons. This points out to the need for continuing these training programmes in the future as well.

The respondents rated all the training courses proposed by the Veterinary Council of India to be included in the continuing veterinary education programme as either highly relevant or relevant. This suggests that the veterinary and animal husbandry organisations concerned should take up necessary steps to include these courses in the curriculum of CVE.

5.5 Preferred duration, periodicity, mode, trainers and venue of training and preferred subject matter areas for specialisation

Even though many experienced subject matter experts were available with the parent organisation, majority of the respondents preferred trainers from outside it and in a couple of cases majority preferred trainers from even outside the state probably due to the feeling that more competent persons were available outside and an interaction with them would be beneficial.

The finding that many were preferring a training of 15 days duration under the CVE programme that led to a certificate indicated a point for consideration while deciding upon the duration of the same. Further, the observation that even a training of one month duration and one of a week duration were also preferred by a considerable percentage of respondents need to be considered while taking such decisions. In view of the aforesaid facts a duration of a week to a month could be thought about for a short training programme leading to a certificate under CVE.

The finding that many were preferring a training programme of three months duration that led to a diploma indicated another point to be considered. Further, in view of the observation that a considerable percentage of respondents preferred a duration of

one year and some that of six months, a duration of three months to one year can be thought about the ideal duration and diploma programme under CVE.

The observation that majority of the respondents preferred the periodicity for the training programme of the duration of one to seven days to be every six months, that of eight to thirty days to be one year and that of above one month to be more than a year need to be considered while deciding the periodicity of training programmes. This is in line with the findings of Jati and Dash(1974), Menon and Annamalai (1975).

It could be noted that almost two – third of the respondents wanted post graduation programme as a part of the CVE programme. Perhaps they wanted to specialise in the subject matter areas of their preference/ choice.

The three subject matter areas most preferred for specialisation in terms of percentage of respondents preferring them were clinical veterinary medicine cum ambulatory clinical practice, veterinary gynaecology and obstetrics and veterinary anaesthesiology and veterinary surgery. Hence specialisation programmes might be started in these areas under CVE programme to begin with. The predominant clinical nature of the duties and responsibilities of the

respondents might be the reason for opting the above subject matter areas.

Regarding the mode of training, the institutional mode of training was the most preferred for all the subject matter areas except extension and professional management for which the distance learning was the most preferred. The preference for institutional mode of training in most subject matter areas might be attributed to the relevance of direct contact with the experienced hands in these fields.

It could be based on their past experience as well as the information received from already trained persons that the respondents preferred veterinary college and other institution of KAU as the venue for a short-term training in the subject matter areas of veterinary science and livestock products technology; institutes within Kerala in the subjected matter areas of animal production, extension, professional management and information technology and premier institutes outside Kerala in the field of zoo and wildlife and biologicals. Nevertheless, the findingsthat for a long-term training premier institutes outside Kerala were preferred for all the subject matter areas except information technology shows the readiness of the veterinary surgeons to move out of the state and share the experiences of experts outside the state.

5.6 Task Analysis

The five comparatively highly ranked task under the different major task areas as revealed by the task analysis were as follows:

1. Medical tasks

i) Management of mastitis

ii) Administration of medicines

iii) Clinical examination of animals

iv) Management of dermatological conditions

v) Dietary support for various conditions

2. Surgical tasks

i) Udder and teat surgery

ii) Post operative management

iii) Treatment of fracture

iv) Techniques for control of haemorrhage

v) Correction of dislocation

3. Obstetrics and gynaecological tasks

i) Artificial insemination in cattle

ii) Handling of frozen semen

iii) Pregnancy diagnosis in cattle

iv) Detecting abnormalities of uterus, ovary, corpus luteum, follicle

v) Dystocia

4. Laboratory diagnosis tasks

i) Maintenance of laboratory equipment

ii) Faecal examination

iii) Examination of milk samples

iv) Antibiotic sensitivity test

v) Collection and despatch of specimen for microbiological and pathological examination.

Hence,it can be concluded that these task areas are quite relevant to be included in the training curriculum of the continuing veterinary education programme for the veterinarians.

Summary

6. SUMMARY

Revolutionary changes are taking place in every field of science and its application and veterinary and animal husbandry are no exceptions. This has very much necessitated the veterinary surgeons to update their professional knowledge and skills. Updating of professional competence is best possible through an effective continuing veterinary education programme (CVE). The Veterinary Council of India, too, has emphasised the need for introducing an effective system of CVE programme in every state. Keeping in view of the aforesaid facts, this study was undertaken with the objective of identifying the training needs of veterinary surgeons of Kerala for continuing veterinary education.

The study was confined to the veterinary surgeons of Kerala. Data required for the study were collected through structured questionnaires to which 130 veterinary surgeons out of 764 responded. Simple arithmetic calculations like percentage and means and statistical tools like correlation were used to analyse the data.

Under the major domains, the training need analysis revealed zoo and wild life as the most preferred domain for

knowledge cum skill based training followed by information technology, medicine, surgery extension, livestock products technology, obstetrics and gynaecology, professional management and animal production. The specific matter under the different major domains that were preferred the most by the veterinary surgeons for knowledge based training were chemical immobilisation of wild animals, basics of computer, modern diagnostic procedures, anaesthetics and anaesthesia, modern extension teaching methods, embryo transfer technology, treatment and disposal of slaughter house by-products and management, service rules and regulations and breeding and management of pet animals. The subject matter areas most preferred for skill based training were management of domesticated elephants, using computer in office, modern diagnostic procedures, small animal surgery, modern extension teaching methods, quality assurance of meat and meat products, embryo transfer technology, service rules and regulations and breeding and management of pet animals.

Correlation was worked out to find out the relationship of the socio-personal characteristics of veterinary surgeons and their training need in terms of knowledge, skill as well as knowledge and skill put together in different subject matter areas. But no significant relationship was found between the socio-personal characteristics of veterinary surgeons and their expressed training needs.

The veterinary surgeons rated the training programmes organised by the Kerala Agricultural University, Kerala Livestock Development Board, Indian Veterinary Research Institute and the Institute of Management in Government and the CVE proposed by the Veterinary Council of India (VCI) as either highly relevant or relevant.

Among the respondents 66.15 per cent expressed the desire for the post graduation programmes to be introduced as part of the CVE. The most preferred subject matter areas for specialisation were clinical subjects in the order of clinical veterinary medicine cum ambulatory clinical practice, veterinary gynaecology and obstetrics and veterinary anaesthiology cum veterinary surgery.

The most preferred durations for CVE training programmes leading to certificate and diploma were 15 days and 90 days respectively. For the short-term trainings of one to seven days and eight to thirty day's duration the preferred periodicities were six months and an year respectively. The widely preferred periodicity for long-term training programmes of more than one-month duration was more than a year.

The most preferred trainers for CVE training programmes were those from outside the parent organisation and for a couple of subjects even from outside the state. The most preferred

mode of training was institutional in the case of most of the subjects except for extension and professional management. In the case of extension and professional management the most preferred mode was distance learning.

The most preferred venue for a short-term training was those institutes within Kerala other than the institutes of KAU, particularly for subjects viz., animal production, extension, professional management and information technology. The institutes of KAU were the most preferred for trainings in veterinary science and livestock products technology. Premier institutes outside Kerala were preferred the most for trainings in zoo and wildlife and biologicals. The venue, which was preferred the most for long-term training was premier institutes outside Kerala for all the subject matter areas except biologicals where the choice is institutes other than KAU within Kerala.

The task analysis revealed those tasks pertaining to medicine, surgery, gynaecology and laboratory diagnosis which are to be emphasised in the CVE training programmes concerned. The tasks to be emphasized under medicine are management of mastitis, administration of medicines and clinical examination of animals; those under surgery are udder and teat surgery, post operative care and treatment of fracture; those under gynaecology are artificial insemination in cattle, handling of frozen semen and pregnancy

diagnosis in cattle and those under laboratory diagnosis are maintenance of laboratory equipments, faecal examination and examination of milk samples.

Suggestions for effective CVE training programmes

The findings of this study imply that

1. Comparatively more importance should be given to the subject's zoo and wildlife, information technology and veterinary medicine in the continuing education programme meant for veterinary surgeons.

2. The specific subject matter aspects such as management of domesticated elephants, using computer in office, modern diagnostic procedures, small animal surgery, modern extension teaching methods, quality assurance of meat and meat products, embryo transfer technology, service rules and regulations and breeding and management of pet animals should be emphasised in the curriculum of the CVE for the subjects concerned.

3. Apart from these, the tasks related to clinical aspects such as management of mastitis, administration of medicines, clinical examination of animals, udder and teat surgery, post operative care, treatment of fracture, artificial insemination in cattle, handling of frozen semen, pregnancy

diagnosis in cattle, maintenance of laboratory equipments, faecal examination and examination of milk samples should be emphasised in the curriculum of the CVE courses for the concerned subjects.

4. Institutional mode of training should be adopted in the case of training in subjects such as veterinary medicine, obstetrics and gynaecology, surgery, animal production, live stock products technology, zoo and wild life and information technology.

5. Distance learning should be adopted as the mode of training in extension and professional management.

6. The trainers should be from outside the parental organisation in the case of the subject's medicine, obstetrics and gynaecology, surgery, laboratory diagnosis animal production, extension, information technology and professional management and even from outside the state in the case of the subject's zoo and wildlife and live stock products technology.

7. The venue for a short-term training should be institutes within Kerala especially for the subjects animal production, extension, professional management, information technology, veterinary science and livestock products

technology and for zoo and wildlife and biologicals it should be outside Kerala.

8. The venue for a long-term training should be selected premier institutes outside Kerala.

9. The periodicity for short-term trainings should be six months or an year and periodicity for long-term trainings should be more than a year.

10. Since the training programmes organised by various organisations viz., KAU, KLDB, IVRI and IMG was found to be either highly relevant or relevant they shall continue to be part of CVE programme.

11. Since the CVE programmes proposed by VCI viz., skilled/specific technology courses were found to be either highly relevant or relevant they shall be taken by the responsible training organisations.

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Appendix

APPENDIX

DR. P.J. RAJKAMAL,
Associate Professor and Head i/c,
Department of Extension,
College of Veterinary and Animal Sciences,
Mannuthy (P.O), Thrissur – 680 651.

Dear Doctor,

One of our postgraduate students in Veterinary Extension discipline Dr. K.M. Sakthivel has taken up for research work the problem entitled "Analysis of the training needs of Veterinary Surgeons of Kerala for continuing veterinary education". I am happy to inform you that you have been selected as a respondent for this study.

I request you to kindly spare sometime to go through the questionnaire and express your opinion on the various items frankly. It is sure that your valuable responses would enrich the quality and early completion of the study. The questionnaire with instruction for filling up is enclosed. The filled in questionnaire may be sent at the earliest to

Dr. K.M. Sakthivel
M.V.Sc. Scholar,
Department of Extension,
College of Veterinary and Animal Sciences,
Mannuthy (P.O.),
Thrissur – 680 651.

Expecting your whole hearted co-operation.

Thanking you

Yours sincerely,

(DR. P.J. RAJKAMAL)

Analysis of the training needs of veterinary surgeons of Kerala for continuing Veterinary education

QUESTIONNAIRE

General instructions

1. Please read each statement carefully and indicate your response
2. Please do not leave any item; incomplete information may lead to inconclusive results.
3. Please write your answer in the space provided or (✓) tick in the appropriate box.

PART I
PERSONAL PROFILE

1. Name _____

2. Age _____years

3. Gender Male ☐ Female ☐

4. Marital status Married ☐ Unmarried ☐
   No. of children _____
   Age of the youngest child _____

5. Family Joint family ☐ Nuclear family ☐

6. Qualification (Please mention the name of the degree, diploma, certificate)
   i. Degree _____
   ii. Diploma _____
   iii. Certificate _____

7. Present designation and office _____
   _____

8. Past experience (Mention only the stations of AHD that you have worked)

Sl.No	Office (Farm, hospital etc.,)	Duration worked (approx.)
1		
2		
3		
4		
5		

9. If you have own house (or parents house), whether you are working
   a. In the same district Yes/No
   b. In nearby districts Yes/No
   c. In a faraway district Yes/No

10. Are you commuting (travelling daily) to your work place Yes/No
    If you are a commuter, how much distance do you travel daily _____kms(apporx.)

11. How many of the following (related to the profession) did you attend last calendar year January to December 2000

	Number attended
a. Seminar	_____
b. Symposium	_____
c. Workshop	_____

12. Do you read Journals? Yes/No
    If yes, what are the journals you read occasionally (Please tick ✓ mark)

Sl. No.	Name of the Journal	Journal read
1	Journal of Indian Veterinary Association (JIVA)	
2	Kerala Journal of Veterinary and Animal Sciences	
3	Indian Veterinary Journal (IVJ)	
4	Indian Dairyman	
5	Journal of Animal Reproduction	
6	Journal of Animal Health	
7	Dairy Guide	
8	Inpractice	
9	The Veterinarian	
10	Pet India	
11	Poultry Guide	
12	Zoos Print	
13	Any other (specify) 1. 2. 3.	

13. Do you read periodicals related to the profession? Yes/No
    If yes what are the periodicals you read occasionally (please tick ✓ mark)

Sl. No.	Name of the periodicals	Periodicals read
1	Kurukshetra	
2	Yojana	
3	Pasudhan	
4	Kerala Karshakan (FIB)	
5	'Kalpadhenu (KAU)	
6	'Karshakasree (Manroma)	
7	'Ksheerapadham' (Milma)	
8	Any other (Specify) 1: 2. 3.	

PART II

Note: In this **PART II** of the questionnaire an analysis of the tasks is attempted at. You may attend to any category of tasks (categorized as medical, surgical, obstetrics and gynecology and laboratory diagnosis), if only you have worked/ working in the relevant field.

Please indicate the frequency of performance, level of importance and learning (performance) difficulty of the following tasks using the codes given in the boxes provided by a tick mark (✓)

		Frequency of performance					Level of Importance			Learning (performance) difficulty			
	1. Medical Task	1	2	3	4	5	1	2	3	1	2	3	4
1	Clinical examination of animals (Palpation, Percussion, Auscultation)												
2	Biopsy												
3	Collection of CSF												
4	Lumbar puncture												
5	Urethral catherization												
6	Opthalmoscopy												
7	Passing of stomach tube												
8	Laryngoscopy												
9	Fluid therapy												
10	Blood transfusion												
11	Administration of medicines (Pharmacology, route, dose, contraindication)												
12	Otoscopy												
13	Dietary support for various conditions												
14	Critical care technique												
15	Allergic test												
16	Management of dermatological conditions												
17	Management of mastitis												
18	Clinical signs of various types of poisoning and its management												
	2. Surgical Tasks												
1	Suturing techniques												
2	Techniques for control of hemorrhage												
3	General anaesthesia												
4	Local anaesthesia												
5	Cornual nerve block												
6	Epidural anaesthesia												
7	Amputation of horn												

Frequency of performance	Level of Importance	Learning (performance) difficulty
1 Seldom/ never	1 Marginally important	1 Easy
2 Occasionally	2 Moderately important	2 Moderately difficult
3 Weekly to monthly	3 Extremely important	3 Difficult
4 Daily to weekly		4 Very difficult
5 Daily		

		1 Seldom/ never 2 Occasionally 3 Weekly to monthly 4 Daily to weekly 5 Daily					1 Marginally important 2 Moderately important 3 Extremely important			1 Easy 2 Moderately difficult 3 Difficult 4 Very difficult			
		Frequency of performance					Level of Importance			Learning (performance) difficulty			
Surgical task		1	2	3	4	5	1	2	3	1	2	3	4
8	Amputation of limb												
9	Paravertebral nerve block												
10	Rumenotomy												
11	Extraction of tooth												
12	GI tract surgical conditions												
13	Castration and vasectomy												
14	Removal of tumor												
15	Road accident traumas												
16	Atrasia ani												
17	Treatment of fracture												
18	Correction of dislocation												
19	Patellar desmotomy												
20	Reduction of hernia												
21	Ear cropping												
22	Zepp's operation (ear haematoma)												
23	Surgical management of cataract												
24	Urethrotomy												
25	Docking												
26	Spaying												
27	Lameness												
28	Neuorectomy												
29	Managing anaesthetic hazards												
30	Udder and teat surgery												
31	Tenotomy												
32	Post operative management												
3. Obstetrics and gynaecological task													
1	Detecting abnormalities of uterus, ovary, Corpus Luteum, follicle												
2	Artificial insemination in cattle												
3	Pregnancy diagnosis in cattle												
4	Retained fetal membranes												
5	Prolapse of uterus												
6	Induction of parturition												
7	Caesarean												
8	Dystocia												
9	Episiotomy												
10	Hormonal therapy in infertility												
11	Handling of frozen semen												
12	Artificial insemination in goats												
13	Pregnancy diagnosis in goat												
14	Artificial insemination in bitch												
15	Pregnancy diagnosis in bitch												
16	Cystic ovary removal												

		1 Seldom/ never 2 Occasionally 3 Weekly to monthly 4 Daily to weekly 5 Daily					1 Marginally important 2 Moderately important 3 Extremely important			1 Easy 2 Moderately difficult 3 Difficult 4 Very difficult			
		Frequency of performance					**Level of Importance**			**Learning (performance) difficulty**			
		1	2	3	4	5	1	2	3	1	2	3	4
17	Vaginal cytology in bitch												
18	Estrous induction in bitch												
4. Laboratory Diagnosis tasks													
1	Maintenance of laboratory equipment												
2	Collection and dispatch of specimens for microbiological and pathological examination (blood, urine, faeces etc.)												
3	Serological test												
4	Fluorescent antibody technique												
5	Haematology												
6	Urine analysis												
7	Examination of milk samples												
8	Faecal examination												
9	Liver function test												
10	Electrocardiography (ECG)												
11	Ultrasonography												
12	Cultural & Antibiotic sensitivity test												
13	Detection of Aflatoxin												

PART III

Please indicate your knowledge and skill requirements (needs) on various subject matter areas by giving a tick mark (✓) against the suitable columns using the codes given below (*you have to attempt all items*).

MEDICINE

R Required SR Somewhat required NR Not required

Sl. No.	Subject matter areas	Knowledge			Skill		
		R	SR	NR	R	SR	NR
1.	Modern diagnostic procedures						
2.	Diagnosis, Treatment and Control of Contagious and infectious diseases of livestock						
3.	Diagnosis , Treatment and Control of Metabolic and deficiency diseases of livestock						
4.	Diagnosis, Treatment and Control of Emerging diseases among livestock						
5.	Diagnosis, Treatment and Control of Contagious and infectious diseases of poultry						
6.	Diagnosis, Treatment and Control of metabolic and deficiency diseases of poultry						

R Required
SR Somewhat required
NR Not required

Sl. No.	Subject matter areas	Knowledge			Skill		
		R	SR	NR	R	SR	NR
7.	Diagnosis, Treatment and Control of diseases of pet animals and birds						
8.	Diagnosis, Treatment and Control of emerging diseases of poultry						
9.	Common poisoning in animals and their treatment						

OBSTETRICS AND GYNAECOLOGY

1.	Diagnosis of pregnancy and foetal abnormalities						
2.	Accidents of Gestation and their management						
3.	Diagnosis and correction of various types of dystocia						
4.	Post parturient complications & their management						
5.	Infertility management in farm animals						
6.	Infertility management in pet animals						
7.	Hormones and their application in reproduction						
8.	Infertility in male animals						
9.	Embryo transfer technology						

SURGERY

1.	Anaesthetics and anaesthesia						
2.	Small animal surgery						
3.	Large animal surgery						
4.	Diagnostic radiology						
5.	Orthopedics						
6.	Cosmetic surgery						
7.	Emergency surgery						
8.	Post operative care						

ANIMAL PRODUCTION

1.	Dairy cattle production and management						
2.	Buffalo production and management						
3.	Swine production and management						
4.	Goat production and management						
5.	Sheep production and management						
6.	Fodder production						
7.	Broiler production and management						
8.	Layer production and management						
9.	Quail production and management						
10.	Duck production and management						
11.	Turkey production and management						
12.	Breeding and management of pet animals						
13.	Farm hygiene and sanitation						
14.	Production of meat animals						

R Required
SR Somewhat required
NR Not required

LIVESTOCK PRODUCTS TECHNOLOGY

Sl. No	Subject matter areas	Knowledge			Skill		
		R	SR	NR	R	SR	NR
1.	Wholesome meat production						
2.	Quality assurance of meat & meat products						
3.	Food borne infections & intoxications						
4.	Meat and meat products technology						
5.	Milk and milk products technology						
6.	Treatment and disposal of slaughter house byproducts and condemned materials						
7.	Design and management of abattoir						
8.	Disposal of carcasses and slaughter house waste						
9.	Transportation & marketing of live stock products						

ZOO AND WILDLIFE

1	Management of domesticated elephants						
2	Management of zoo animals and birds						
3	Conservation of wild animals						
4	Chemical immobilization of wild animals						
5	Wildlife diseases,diagnosis and treatment						

EXTENSION

1	Modern extension teaching methods						
2	Advanced training methods & HRD						
3	Project formulation, implementation and evaluation						
4	Mass media communication and journalism						
5	Enterpreunership/leadership development among livestock owners						
6	Participatory rural appraisal (PRA) techniques						
7	Organising seminars,symposia,exhibition,etc.,						

PROFESSIONAL MANAGEMENT

1	Office administration and supervision						
2	Personnel management (Labour /staff)						
3	Record keeping						
4	Service rules and regulations						

INFORMATION TECHNOLOGY

1	Basics of computer, word processing, creation of graphs, spread sheets.						
2	Database creation, uses and maintenance						
3	Using computer in office						
4	Internet and its uses						
5	Websites, its creation and utilisation						

PART IV

1. Given below are some of the training programs conducted by various training institutions from 1997 and attended by selected veterinary surgeons of the state. Even if you have not attended these trainings please indicate the relevancy of these training programmes to be incorporated in the C.V.E. programme by a tick mark (✓)

Sl. No	Training programs of KAU	Duration	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
1	Advances in diagnosis and treatment of pet animals and lovebirds.	3 days				
2	Advances in ruminant medicine	6 days				
3	Fluid therapy and critical care	5 days				
4	Special clinical diagnostic procedures	5 days				
5.	Mastitis and its diagnosis	6 days				
6.	Clinical surgery and anaesthesia	6 days				
7.	Diagnostic radiology and orthropaedics	10 days				
8	Large animal surgery					
9	Anaethesiology and orthropaedics	6 days				
10	Operative surgery	7 days				
11	Fertility management of livestock	3 months				
12	Chemical immobilisation (tranquilisation using capture gun)	6 days				
13	Diagnosis of parasitic diseases in domestic animals	5 days				
14	Postmortem techniques	7 days				
15	Aflatoxin analysis	10 days				
16	Diagnosis of cancer with special reference to ethmoid cancer	7 days				
17	Immunodiagnosis of infectious diseases	6 days				
18	Brucellosis and its diagnosis	3 days				
19	Mycotic infection in animals	7 days				
20	Abattoir management and meat inspection	6 days				
21	Applied nutrition and feed analysis	7 days				
22	Poultry production and management	3 months				
23	Formulation of projects in cattle and goat rearing	5 days				
24	Formulation of projects in pig and small animals	5 days				
25	Management strategies for cost efficient pig production	6 days				
26	Management strategies for cost efficient goat production	6 days				
27	Breeding, Feeding and management strategies for cost efficient pig production in rural sector	6 days				

TRAINING PROGRAMMES OF KLDB

28	Embryo transfer technology	4weeks				
29	Advanced technology in cattle production	1 week				

TRAINING PROGRAMS OF IVRI

30	Advances in clinical diagnosis and therapy in veterinary medicine	15 days				
31	Laboratory diagnosis of animal disease and zoonosis	2weeks				
32	Laboratory diagnosis of common cutaneous diseases of animals	2weeks				
33	Fracture management in animals	1month				

TRAINING PROGRAMS OF IMG		Duration	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
34	Induction and orientation programme for newly recruited Veterinary surgeons	10 days				
35	Management of environment	5 days				
36	Management skills for rural development	5 days				
37	Rural marketing management	5 days				
38	Gender and development	5 days				
39	Monitoring and evaluation of rural development projects	5 days				
40	Leadership training for women	11 days				
41	Planning and management of integrated farming	5 days				
42	Windows 95 and MS office 97 for senior or middle level officers	11 days				
43	Management in government for senior/ Middle level officers	11 days				
44	Decentralised planning	5 days				
45	Project management for AHD	5 days				
46	Training of trainers for rural development	5 days				
47	Behavioural dimensions of rural development	3 days				
48	Economic reforms issues in development administration	5 days				
49	Computer aided projects management	5 days				
50	Management information systems for officers of AHD	6 days				
51	MS Access for senior officers	11 days				
52	Windows 98 and MS office 97	20 days				
53	Office automation	5 days				
54	Assertiveness for women executives	5 days				
55	Proactive roles of housewives in society	5 days				
56	Life skills development for women	5 days				

2. Please mention the training programs that you have attended among those programmes listed above (1 to 56). Indicate the serial numbers only
(Eg: 2, 31, 55)
Ans:_____

Any other which you have attended but not listed above

Sl. No.	Training program	Training institute	Duration
1			
2			
3			

3. VCI has proposed some C.V.E programmes as follows. Please rate the relevancy of the same to be incorporated in the CVE programme

A) Skilled/ specific technology courses of 8-12 weeks duration

Sl. No	Title	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
1.	Feed formulation				
2.	Feed technology				
3.	Feed analysis				
4.	Artificial Insemination				
5.	Embryo transfer technology				
6.	Clinical biochemistry				
7.	Computer assisted data handling				
8.	Wild animal diseases				

Sl. No	Title	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
9.	Chemical restraint of wild and zoo animals				
10.	Disease surveillance				
11.	Abattoir management				
12.	Slaughter house and animal byproducts technology				
13.	Meat processing technology				
14.	Poultry processing technology				
15.	Meat hygiene				
16.	Milk hygiene				
17.	Veterinary medical diagnostic technologies				
18.	Clinical parasitology				
19.	Necropsy and hygienic disposal of carcasses				
20.	Poultry pathology				
21.	Drug and pesticides assay				
22.	Rabies control				
23.	Applied immunology for veterinary investigation (molecular epidemiology)				
24.	Mass communication technology				
25	Brucellosis control				
26.	Anaesthesiology				
27.	Ruminants surgery				
28.	Small animal surgery				
29.	Diagnostic radiology				
30.	Gynaecological practice				
31.	Obstetrical practice				
32.	Pet animal practice				
33.	Equine practice				
34.	Veterinary economics				
35.	Ruminant medicine				
36	Veterinary services management				
37.	Project and man power planning				
38.	Veterinary dermatology				
39.	Tuberculosis control				
40.	Commercial hatchery – production and management				
41.	Commercial broiler – production and management				
42.	Commercial layer – production and management				
43.	Commercial duck – production and management				
44.	Turkey – production and management				
45.	Quail – production and management				
46.	Swine production and management				
47.	Dairy production and management				
48.	Veterinary ethology and animal welfare				
49.	Livestock emergency disease control and management				

B) Short courses of technical competence development program of 2-4 weeks duration

Sl. No	Title	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
1.	Rumen medicine				
2.	Fluid and electrolyte therapy in critical patients				
3.	Control of mastitis and current therapies				
4.	Endoscopy in veterinary patients				
5.	Electrocardiographic diagnosis				

Sl. No	Title	Highly Relevant	Relevant	Somewhat Relevant	Not Relevant
6.	Opthalamoscopy				
7.	Tissue biopsy techniques				
8.	Resuscitation of critically ill patients (small animals)				
9.	Resuscitation of critically ill patients (large animals)				
10.	Primary care & external fixation in large animal fracture				
11.	Primary care & external fixation in pets with fracture				
12.	Urethrotomy in male ruminants				
13.	Rumenotomy				
14.	Laproscopy in small animals				
15.	Laproscopy in large animals				
16.	Infertility in farm animals				
17.	Dialysis in small animals				
18.	Dialysis in large animals				
19.	Exfoliate cytology				
20.	Treatment of prolapse in farm animals				
21.	Postmortem techniques and specimen dispatch				
22.	Use of diagnostic kits for bacterial and viral diseases				
23.	Use of diagnostic kits for protozoan diseases				
24.	Current treatment of skin diseases				
25.	Handling of bio-materials ,norm and regulations				

4. If training (CVE) is organised in the state for the following general subject matter areas, from where the trainers or experts should be? Rank your first, second and third preferences

Sl. No.	Subject matter area	Experts from the organisation (AHD)	Experts from outside the organisation but within the state	Experts from outside the state
eg.	Crop production	2nd	1st	3rd
1	Medicine			
2	Obstetrics & Gynecology			
3	Surgery			
4	Laboratory Diagnosis			
5	Animal production			
6	Livestock products technology			
7	Extension			
8	Information technology			
9	Professional management			
10	Zoo and wild life			

5. Considering your convenience as well as necessity to keep abreast of technological changes, at what periodicity you can attend to a short -term training (you may have to stay away from home). Tick mark (✓) the appropriate column

Sl. No.	Duration of the training (C.V.E) program	Periodicity of the training (CVE)			
		Every 3 months	Every 6 months	Every year	More than a year
1	1- 7 days				
2	8- 14 days				
3	14-30 days				
4	More than 1 month				

6. What should be the duration for a short term residential CVE program leading to a

1.Certificate. Ans.....

2.Diploma. Ans.....

7. Do you feel a postgraduate study program leading to a PG degree should be made a part of the CVE programme- Yes/No
8. If you are given an option to specialize in a specific area, what will be your area of preference? Give your first, second and third preferences.

Sl. No.	Subject matter	Preferences rank*
1.	Clinical veterinary medicine & ambulatory clinical practice	
2.	Veterinary gynaecology and obstetrics	
3.	Veterinary Anaesthesiology and veterinary surgery	
4.	Veterinary radiology and orthopaedics	
5.	Animal reproduction technology	
6.	Laboratory diagnostic technology	
7.	Veterinary epidemiology and preventive management	
8.	Veterinary public health	
9.	Cattle production and management	
10	Buffalo production and management	
11.	Sheep production and management	
12.	Goat production and management	
13.	Swine production and management	
14.	Poultry production and management	
15.	Elephant production and management	
16.	Equine production and management	
17.	Lab animal production and management	
18.	Zoo/wildlife health care and management	
19.	Meat and meat products technology	
20.	Fodder and feed technology	
21.	Ethology and animal welfare	
22.	Veterinary biologicals and biotechnology	
23.	Administration & human resource management	
24.	Mass communication, Journalism & Extension	

* Only 1st, 2nd and 3rd preferences need be mentioned against the respective subject matter areas

9. Please give your first, second and third preferences as to what should be the mode of training for the following subjected matter areas.

Sl. No.	Subject matter areas	Mode of training		
		1. Distance learning (correspondence, website etc.,)	2. Institutional (Face to face)	Integrated appropriate combination of 1 and 2)
Eg.	Crop production	2nd	1st	3rd
1	Medicine			
2	Obstetrics & Gynecology			
3	Surgery			
4	Laboratory Diagnosis			
5	Animal production			
6	Livestock products technology			
7	Extension			
8	Information technology			
9	Professional management			
10	Zoo and wild life			

10. Please indicate your 1st and 2nd preferences for the venue regarding a short-term training course (2-4 weeks duration) and long term training course (8-12 weeks duration) by choosing it from the list of training centres given below by writing only the alphabets:

Subject matter area	(Preference) Short-term training (2-4 weeks duration)	(Preference) Long-term training (8-12 weeks duration)	List of training centres
Veterinary Science	1. 2.	1. 2.	A. Veterinary College, Thrissur. B. Identified DVC's/polyclinics/hospitals /RAIC's etc. of AHD C. Premier institutes outside Kerala such as IVRI, Madras Veterinary College etc.
Animal Production	1. 2.	1. 2.	A. Veterinary College, Thrissur and Identified KAU farms, B. Model private farms, KLDB farms etc. C. Premier institutes outside Kerala such as IVRI, NDRI, etc.
Livestock Products Technology	1. 2.	1. 2.	A. Veterinary College (Meat/Dairy Technology Unit), Thrissur. B. Meat products of India, Koothathukulam, MILMA dairy plant etc. within the state. C. Premier institutes outside Kerala such as IVRI, NDRI, CFTRI-Mysore, etc
Extension	1. 2.	1. 2.	A. Central Training Institute, KAU B. KILA, IMG's of the state. C. Premier institutes outside Kerala such as MANAGE, NIRD, NAARM-Hyderabad, etc.
Professional Management	1. 2.	1. 2.	A. Central Training Institute, KAU B. KILA, IMG's of the state. C. Premier institutes outside Kerala such as MANAGE, NIRD, NAARM-Hyderabad, etc.
Zoo and Wildlife	1. 2.	1. 2.	A. Veterinary College, Thrissur. B. Identified Zoo's of Kerala and identified centres of Forest Department. C. Premier Institutes outside Kerala such as Dehradun, Madras Veterinary College etc.
Biologicals	1. 2.	1. 2.	A. Veterinary College, Thrissur. B. VBI, Palode. C. Premier Institutes outside Kerala such as IVPM, IVRI, CARI etc.
Information Technology	1. 2.	1. 2.	A. KAU Library and Information Systems, Vellanikkara, Thrissur. B. Identified Institutes like IMG, NIC etc. C. Premier Institutes outside Kerala such as Madras Veterinary College etc.

ANALYSIS OF THE TRAINING NEEDS OF VETERINARY SURGEONS OF KERALA FOR CONTINUING VETERINARY EDUCATION

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ABSTRACT OF THE THESIS

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ABSTRACT

The objective of the study was to identify the training needs of veterinary surgeons of Kerala for continuing veterinary education. The data were collected from 130 veterinary surgeons of the Animal Husbandry Department of Kerala. Questionnaires were used for data collection.

The training need was not seen dependent on any of the socio-personal characteristics of the respondents, viz., age, sex, marital status, type of family, educational qualification, professional experience, number of children, age of the youngest child, location of residence, distance to work place, number of seminars, symposiums etc., attended, number of professional journals read, number of periodicals read and number of trainings attended.

Zoo and wild life was the most preferred general subject matter domain for training among the nine studied. This was followed by information technology, medicine, surgery, extension, livestock products technology, obstetrics and gynaecology, professional management and animal production in the descending order of preference. The most preferred specific subject matter areas were management of domesticated elephants, using computer in

office, modern diagnostic procedures, small animal surgery, modern extension teaching methods, quality assurance of meat and meat products, embryo transfer technology, service rules and regulations and breeding and management of pet animals. The training programmes being organised by the various organisations such as KAU, IMG, KLDB, IVRI and CVE programmes proposed by Veterinary Council of India were found to be either highly relevant or relevant and hence these programmes might form part of CVE programme.

The findings of task analysis pertaining to veterinary practice indicated the importance of incorporating in the training curriculum both the theoretical and practical aspects of management of mastitis, administration of medicines, clinical examination of animals, udder and teat surgery, post operative care, treatment of fracture, artificial insemination in cattle, handling of frozen semen, pregnancy diagnosis in cattle, maintenance of laboratory equipments, faecal examination and examination of milk samples.

The study further indicated the strategies to be adopted in organising the CVE programmes. An institutional mode of training was preferred to either distance learning or a combination of both in the case of major domains viz., veterinary science, animal production, live stock products technology, zoo and wild life, and information technology whereas distance learning was the preference

in the case of extension and professional management. Trainers from outside the parent organisation were preferred while organising training programmes. The venue of training preferred was institutes within the state in the case of short-term training and those outside the state in the case of long-term training. The preferred periodicity of a short-term training was a year or less than a year while that for a long-term training was more than a year. The preferred duration of a short term training leading to a certificate was 15 days and that leading to a diploma was 90 days.