

## THE ROLE OF THE VETERINARIAN IN THE EDUCATION AND HEALTH OF PRE-SCHOOL CHILDREN

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### ABSTRACT

Two surveys conducted in pre-schools (n=156) located in advantaged areas and disadvantaged areas in Pretoria, indicated that animals had social and psychological as well as educational value for pre-school children. All schools (n=156) utilised animals in some way for the education of pre-school children. Nineteen of the pre-schools in advantaged areas kept animals permanently at the school. All of these schools utilised the zoo. Only 3 of the schools in disadvantaged areas (n=106) were able to keep animals permanently on the premises although 69 would have liked to keep animals and 77 of the schools visited the zoo at least once a year. Limiting factors included lack of finances and facilities, lack of knowledge on animal management and anxiety about zoonoses. No cases of zoonotic disease in children were recorded. The species of animals utilised at the pre-schools differed from those found most commonly as household pets. Pre-schools favoured rodents, fish and birds rather than carnivores.

The role of the veterinarian may include clinical treatment of the animals from the pre-school, advice on management and zoonosis prevention, pet-care counselling, communication with children and their parents in the consulting room, public health aspects and promotion of environmental education.

**Key words:** Pre-school, education, veterinarian, communication, zoonoses, pet-care counselling, human-education.

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### INTRODUCTION

Animal-related topics are not confined to those disciplines dealing only with zoology, agriculture and veterinary science, but probably to all fields of academia. Much of the educational and recreational material presented to pre-school children, is in some way related to animals<sup>4, 16</sup>. The stresses of today's society have resulted in alienation, isolation and loneliness for both children and adults<sup>2</sup>. Although socio-economic

aspects may play a role in disadvantaged children, this phenomenon is probably as common in affluent households. This may in part be remedied if the young child can inter-react with animals under structured and controlled supervision in the pre-school<sup>16</sup> where the social and emotional advantages attached to human-animal contact may be experienced<sup>11, 12, 13</sup>.

A high percentage of veterinary clients have been found to be parents with young children<sup>1, 3, 10, 14, 15</sup>. It is therefore to the advantage of the private practitioner to become involved in matters pertaining to young children. According to the American Veterinary Association's booklet on marketing strategies<sup>1</sup>, 30% to 80% of new clients are estimated to be

the result of word-of-mouth referrals. It suggests 2 key sources for referrals, namely clients and personal social structures<sup>1</sup>. As many clients are parents, showing an interest in and being able to communicate with their children therefore has obvious benefits for a veterinary practice. This has been recognised in South Africa by the introduction of Pet-Care Week by the South African Veterinary Association. However most of the information disseminated, is aimed at the school-going child who is already literate, without due consideration being given to the pre-school child where the type of communication is entirely different and more analogous to communication with an illiterate of any age<sup>7</sup>.

Limiting factors preventing animals being kept permanently at schools, are lack of knowledge regarding the management, housing and diseases of these animals as well as considerable anxiety about zoonoses and allergies<sup>5, 6</sup>. For the purposes of this publication, a disadvantaged child is defined as one being brought up under conditions where poverty is a limiting factor in the education of that child<sup>9</sup>. In many cases the pre-school, with its informal methods of teaching and involvement of parents, is an excellent way of disseminating knowledge to the community<sup>9</sup>.

The aim of this investigation was to elucidate the scope of involvement with animals in the pre-school. Such involvement was then considered with reference to the value animal contact has for the pre-school child in terms of physical and mental health as well as risks to the child as a result of zoonotic diseases, allergies and injuries.

### METHOD

#### Pre-schools in advantaged areas:

A questionnaire (Table 1) was compiled in 1987 and an alphabetical list of all the pre-schools within the municipal boundaries of Pretoria (n=65) was obtained from the South African Association for Early Childhood Education (SAAECE). The list was arranged alphabetically and the first 50 that answered the telephone were selected as a representative sample. The most senior teacher on the staff was asked to answer

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the questionnaire on behalf of each school and time was permitted for consultation with other staff-members in order to obtain consensus of the opinions at each particular school.

#### **Pre-schools in disadvantaged areas:**

A slightly simplified, but similar questionnaire, was handed out to the teachers from disadvantaged schools prior to a lecture on the use of animals in the pre-school. The questions were read out and time given for answers to be written in (English was a second language for many of the participants). The questionnaires were then collected immediately before the lecture. As there were in some cases more than one teacher present from a school, the questionnaires were first grouped according to schools. Of the 125 questionnaires, 19 were discarded as they were incorrectly filled in. The 106 pre-schools and crèches were located in Mamelodi, Soshanguve, Atteridgeville, Mabopane, Hammanskraal, Ga-Rankuwa, Temba, Pankop, Daspoort, De Wildt, Laudium and Eersterust.

#### **Clinical cases needing veterinary treatment:**

Data on all the clinical cases from 2 pre-schools in the advantaged group which kept animals permanently on the premises, were recorded over a period of 10 years.

#### **RESULTS**

The total number of respondents was 156, the numbers of teachers and pupils are reflected in Table 2.

According to the results of the questionnaire, whether animals were kept permanently on the premises or not could not be correlated to the location, language spoken or type of pre-school (Table 1, Questions 1,2,3 and 6). All schools (n=156) in both the advantaged and disadvantaged groups used animals and/or insects for themes or projects (Table 1). The number of schools that kept or did not keep animals on the premises, as well as the number of schools that visited the zoo are reflected in Table 3. Teachers' opinions on the educational, psychological and social value of contact with animals for the pre-school child are presented in Table 4.

The reasons for not keeping animals are listed in Table 5. Two schools in the ad-vantaged group cited an additional reason for not keeping animals. They had kept animals in the past, but older children and tramps had broken into the schools after hours and killed them. In the case of the tramps, rabbits were killed, presumably for food. Older children had stolen and killed guinea-pigs, hamsters and budgerigars. In the

disadvantaged group, a few examples are cited of the reasons given in addition to those listed above. These are quoted in the original English used, as this reflects the emotions and grammatical limitations of teachers from the disadvantaged schools.

"We don't have money to cater for pets".  
"Children should not eat while animals".  
"There is no security at our school like yards".  
"There are no other objects in our school. There are no pets".  
"Unhygienic if we don't look after them".  
"Objections by the Inspector".  
"Pets are of important value as long as you care for them and treat them with disinfectant".

The types of animals kept permanently on the premises at pre-schools are listed in Table 6. Parties responsible for the care, feeding and health of these animals are reflected in Table 7. The number and types of clinical cases requiring veterinary examination are noted in Table 8.

Within the last 5 years, no schools in the advantaged group (n=50) reported disease in children as a result of animal contact. Only 3 cases of allergy were reported. These were allergies to rabbit fur, cat hair and to feathers. The affected children were subsequently kept away from the animals concerned. The rabbit was moved outside, the cat given away and the budgerigar moved to a different classroom. No children had needed the attention of a doctor as a result of injuries sustained from handling animals, although 4 schools mentioned that children had been nipped by hamsters. Three schools described injuries to animals. These were: a child who had poured blue paint into the fish tank, a child who had broken open hatching eggs and pulled out the ducklings and children who had pulled the wings and legs off grasshoppers.

#### **DISCUSSION**

The responsibility for feeding and caring for animals at a pre-school, falls mainly on the teaching staff. They are also in close daily contact with the children and animals and are therefore in a position to judge the value of interaction between these children and the animals. For this and ethical reasons, the questions were therefore structured to gain the opinions of teachers rather than children.

The pre-schools in disadvantaged areas were devoid of fences, grass, trees, climbing apparatus, books, toys - even paper and crayons. For amusement the teachers sat the children in circles and they sang and clapped their hands. Under such circumstances the keeping of animals must have seemed unattainable.

Several (n=69) of these schools would, however, have liked to keep animals. Trips to the zoo are subsidised and therefore within the reach of even the most disadvantaged.

It might have been expected that teachers with larger classes would have had less time to cope with animals at school. This, however, was not the case. In pre-schools in advantaged areas, the number of children per class did not play a significant role in whether or not the schools kept animals permanently. Pre-schools with a higher percentage of qualified teachers were statistically more likely to keep animals permanently on the premises. This is possibly because qualified teachers, as a result of their training, are in a better position to evaluate the needs of the pre-school child<sup>4 16</sup>. The large number (n=205) of pre-schools in the disadvantaged group which did not answer one or more subsections of Question 16, is probably the result of a lack of understanding of the concepts. For most of the teachers at these schools English is a second language.

During a survey of primary and pre-schools in France, Goden et al<sup>5</sup> found no evidence of children having suffered from zoonoses as a result of animals kept at school. The survey done in advantaged pre-schools supported this finding. Despite the fears of teachers at schools that did not keep animals, there was also a very low incidence of allergy and no cases of serious injury to children caused by animals kept permanently at pre-schools.

It cannot be assumed from these findings that there is no possibility of zoonotic diseases occurring in pre-schools. Disease prevention and animal management are within the sphere of the veterinarian<sup>17 18</sup> and veterinary advice on the prevention of zoonoses should be valuable to pre-school teachers. This should also extend to the choice of animals. Psittacines, for example, should be regarded with circumspection because of the risk of psittacosis<sup>5 6 18</sup>. Pre-school education should be pleasant and meaningful<sup>4 16</sup>. This will not be so if children are exposed to animal suffering. The veterinarian should be consulted by the pre-school on management and disease prevention for the well-being of the animals as well as the prevention of zoonoses. The pre-schools in this survey kept rodents fish and birds, rather than carnivores (Table 6). This distribution is different to that in households, where dogs and cats are kept as pets<sup>5 6</sup>. The probable reason for this is that rodents, birds and fish are easier and cheaper to keep at school. Faecal disposal is simpler and the animals are more gregarious than dogs and cats<sup>17</sup>. There is also less danger attached to bites by

these animals.

The veterinarian in private practice is possibly more used to treating companion animals than rabbits, guinea-pigs, bantams, pigeons and fish. The requirements of the pre-school are also slightly different to those of the pet-owner. The number of cases seen is relatively low and cost is a limiting factor in considering the treatment regimen. Animals not easily cured or found to be suffering from zoonotic diseases, cannot be returned to the pre-school. The former because animals that appear to be suffering, lay the school open to complaints by parents concerning animal welfare, and the latter because of the danger to the children.

It has been established from the above that animal topics and animal contact are

used in the pre-school curriculum. A majority of pre-school teachers appreciate that animals have social and psychological value as well as educational value for their pupils. There is also a perception among teachers that animals may affect the health of the pre-school child.

The veterinarian has the knowledge to advise parents and educational authorities on the management of animals to promote their well-being and minimise the risk of disease. In turn, the advantage for the veterinarian is that many of his clients are parents of young children and interest in this field will promote the image of the veterinary profession as a whole, as well as the veterinarian's own practice. A further possible advantage is in the field of health education, where,

through the pre-school, the state veterinarian may have access to the community and be able to educate them in disease prevention to promote public health. A total of 127 of the schools, both advantaged and disadvantaged, visited the zoo. This opens up the possibility of research into animal contact in the pre-school being used to promote conservation and environmental education, particularly with regard to disadvantaged areas.

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Table 1: Questionnaire put to pre-schools within the Pretoria Municipal area

1. Name and address of school
2. Name and position of contact
3. Number of pupils, language spoken
4. Total number of teachers
5. Number of qualified teachers [HED (preprim) or similar]
6. Type of school: private/subsidised/provincial
7. Do you use animals/insects for themes or projects? Y/N
8. Does the school visit the zoo? Y/N
9. Do you keep animals permanently on the premises at school? Yes/No/Sometimes
10. Would you like to keep animals but are unable to? Y/N
11. What are the reasons for not keeping animals?
12. What type of animals do you keep at your school?
13. Who looks after the animals at school?
  - a) During the term: staff member/labourer/parents/children/other
  - b) During the holidays: staff member/labourer/parents/children/other
14. Do you use a duty roster for this? Y/N
15. Who pays for the animal's food and veterinary attention: school/staff member/parents/other
16. In your opinion, contact with animals has a:
  - a) social value for pupils Y/N
  - b) educational value for pupils Y/N
  - c) psychological value for pupils Y/N
17. How many times, within the last 5 years, according to school records, has an animal:
  - a.- caused allergy in a pupil? Give details
  - b.- caused disease in a pupil? Give details
  - c.- been injured or killed by a pupil? Give details

Table 2: Child-teacher ratios and percentage of qualified\* teachers at pre-schools in Pretoria where animals were kept on the premises permanently, occasionally, or not at all

Category	Animals kept permanently	Animals kept occasionally	No animals at school
Total number of children	1493	497	2147
Average number of children	78,6	62,1	102,2
Total number of teachers	85	32	120
% qualified* teachers (significant** at p<0,05)	82,35	56,25	60

\* Higher education diploma (preprimary) or similar. HED (preprim)

\*\* The percentage of qualified teachers at schools where animals were kept permanently was significantly higher than those that did not or only occasionally kept animals. The Chi-squared test was used to determine this significance at a level of probability exceeding 0,05

Table 3: Number of pre-schools that kept animals temporarily, permanently or not at all on the premises of the pre-school, or that visited the zoo

Type of school	Total (n=)	Permanently	Ocasionally	Not at all	Visited the zoo
Advantaged*	50	19	9	22	50
Disadvantaged*	106	3	7	96	77

\*Twenty three of the pre-schools in advantaged areas and 69 of those in disadvantaged areas would have liked to keep animals

Table 4: Teachers' opinions on the educational, psychological and social value of contact with animals for the pre-school child

	Educational	Psychological	Social
<b>Advantaged (n=50)</b>			
Yes	46	42	43
No	3	7	6
Not answered	1	1	1
<b>Disadvantaged (n=106)</b>			
Yes	36	30	32
No	4	7	7
Not answered	67	70	68

Table 5: Reasons for not keeping animals permanently on the premises at the pre-school

Reason	Advantaged (n=31)	Disadvantaged (n=106)
Too much extra work	13	52
Animals carry diseases	14	55
Animals are unhygienic	11	50
Too expensive to feed and care for	7	65
Animals cause allergies	17	60
Children may be bitten or scratched	10	61
Children may injure animals	12	56
Just as much can be learned from books and charts	7	51
The environment at the school is adequate without animal contact	9	45
Pets at home are enough, do not need them at school	14	34
Children should not keep pets at all as they are a health hazard	0	28
Lack of facilities	6	78
Pretoria Municipal Health Department or other health regulations	10	47
Parents object	1	31
Owners of land/nursery school object	3	50
Not answered	0	3

Table 6: Types of animals kept permanently in pre-schools in the advantaged group

Type of animal	Number of schools which kept these animals (n=19)
Rabbits	12
Budgerigars	10
Pigeons and doves	10
Fish	10
Tortoises	8
Chickens and bantams	6
Guinea pigs	5
Dogs	5
Canaries	4
Hamsters	4
Cats	2
Rats	2
Other	5

Table 7: Parties responsible for care, feeding, health and costs involved in keeping animals at the pre-schools where they are kept permanently on the premises (advantaged and disadvantaged schools combined)

Responsible party	Number of schools (n=22)
Care and feeding:	
a) During the term:	
Staff member	9
Labourer	2
Parents	0
Staff member and children	11
b) During the holidays	
Staff member	10
Labourer	2
Parents and children	10
Number of schools using a duty roster:	12
Expenses involved paid by:	
School	20
Staff member	3

Table 8: Number of cases seen between 01/07/79 and 01/07/89 by a private practice involved with 2 pre-schools in advantaged group

Diagnosis	Number of cases seen					
	Rabbits	Guinea pigs	Rats	Hamsters	Pigeons	Fish
"Scaly ear" ( <i>Psoroptes cuniculi</i> )	15	-	-	-	-	-
Malnutrition due to overcrowding	2	2	-	-	-	-
Drowned after rain	1	-	-	-	-	-
Fight wounds	1	-	-	1	-	-
Neuter	10	-	3	-	-	-
Fracture	-	-	-	-	1	-
Tumour	-	-	-	1	-	-
Overfeeding	-	-	-	-	-	2
Total cases seen	29	2	3	2	1	2

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