Pets, pica, pathogens and pre-school children

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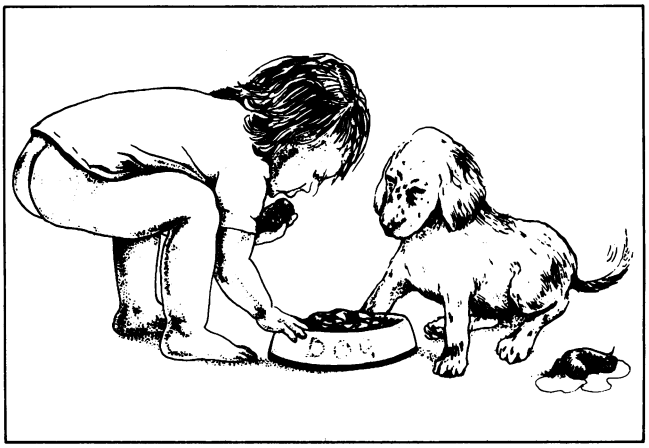
SUMMARY. The incidence of pica in pre-school children was investigated by studying 192 children attending a general paediatric hospital clinic and 69 attending a general practice surgery. The incidence of pica was twice as common in those who kept pets in both study groups. Half of the pet-keeping children with pica had eaten their pet's food. Imitative behaviour is suggested as a probable cause. Pet-keeping compounds a child's risk of infestation not only by providing close contact with a reservoir of enteropathogens but also by encouraging pica.



Introduction

FEW people consider the health hazards of the intimate relationship which develops between child and pet. Most parents and some child psychiatrists (MacDonald, 1979) approve of the companionship of a pet for their children; others find a place in their homes for a large guard dog even if they live in poor circumstances. There has been recent interest in enteropathogens other than bacteria which may be transmitted from animals to man. These enteropathogens include *Giardia* (Wolfe, 1979), *Toxocara* and other nematodes (Woodruff, 1975), *Toxoplasma* and other protozoa, *Echinococcus* and other cestodes (Woodruff, 1971) and *Campylobacter* (Skirrow, 1977). Pet-keeping in childhood has been associated with an increased incidence of gut colonization by enteropathogens (Newton *et al.*, 1979).

Aim

We wanted to explore the relevance of pica, in particular eating the pet's food, as a possible cause of infestation.

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Method

We studied consecutive pre-school children attending a general paediatric hospital clinic over a six-month period and children attending a general practice surgery over a one-month period. The second group were included as unselected controls. All the children were handed a questionnaire by the receptionist. This questionnaire was filled in by the parents and checked by the doctor at the end of the consultation. For each child a record was made of age, social class, number and age of siblings, the presenting complaint and if there was any significant pet contact. The type, age and state of health of any pet was recorded. The parents were then asked if their child was in the habit of eating inedible substances, examples of which were given. If the answer was 'yes', the parents were also asked if their children had ever eaten their pet's food.

Student's t test was used for comparison of means between the two groups and a two-tailed χ^2 test using Yates' correction was used to compare frequencies between groups.

Results

Over the six-month period we studied 192 children attending the hospital and 69 attending the surgery (Table 1). Forty-seven per cent of the hospital group and 51 per cent of the general practice group were pet

Table 1. Pet ownership and social class.

	Social class							
	I	II	III	IV	V	Unknown	Total	Percentage
Hospital children								
Pet owners	2	15	26	7	38	3	91	*47*
No pets	2	17	36	20	26	0	101	*53*
Surgery children								
Pet owners	8	8	12	1	3	3	35	*51*
No pets	4	7	15	2	1	5	34	*49*

Table 2. Presenting symptoms of pet owners and non-owners.

	Pet owners		No pets	
	Number	Per cent	Number	Per cent
Hospital children				
Asymptomatic	26	*28*	22	*22*
GIT, including	27	*30*	30	*30*
Diarrhoea	15		15	
Coeliac	2		5	
Other system disease	38	*42*	49	*48*
Surgery children				
GIT, including	5	*14*	1	*3*
Diarrhoea	1		1	
Other system disease	30	*86*	33	*97*

owners. The mean age of those children with pets was 3.0 years (range 0.6 years—5.6 years) and the mean age of those with no pets was 2.7 years (range 0.6 years—5.7 years). There was no statistically significant difference in age between these two groups.

The social class distribution of the children is also shown in Table I. In neither the hospital nor the general practice children was there a significant difference in social class distribution between pet owners and non pet owners. Our findings appear to be independent of social class.

A summary of the presenting complaints is shown in Table 2. More of the pet-owning group presented with gastro-intestinal complaints, although in the surgery group the numbers were small.

The incidence of pica was found to be higher in those children who owned pets (Table 3) in both hospital and surgery children. This finding was statistically significant, though the p value was larger with the surgery children. About half of the pet-owning children with pica were or had been in the habit of eating their pet's food.

Table 3. Incidence of pica and pet contact.

	Pet owners		No pets	
	Number	Per cent	Number	Per cent
*Hospital children**				
No pica	58	*64*	84	*83*
Pica	33	*36*	17	*17*
Pet's food ever eaten	17	*19*	N/A	
*Surgery children***				
No pica	17	*49*	26	*76*
Pica	18	*51*	8	*24*
Pet's food ever eaten	8		N/A	

*$p = < 0.01$, **$p = < 0.05$

Discussion

We thought it particularly significant that children with pets had twice the incidence of pica of those without, and that of the pet-owning children with pica, half were in the habit of eating their pet's food.

Theories relating to the aetiology of pica are many and varied and involve anthropological (Neumann, 1970), social (Bicknell, 1975), behavioural (Cohen *et al.*, 1976), psychological, nutritional (Gutelius *et al.*, 1962) and physiological (Lanzkowsky, 1959) considerations. However, we can find no reference to keeping a family pet as being relevant to its aetiology. For children in contact with a family pet, pica is probably an expression of the imitative behaviour inherent in human development, which is particularly relevant as far as the pet's food is concerned. The importance of pet ownership in relation to infestation is probably twofold: pets, particularly young ones, are a host for parasites, and it also seems that their presence in a household increases the likelihood of children developing pica and compounding the risk of infestation. When confronted in the surgery by a child with diarrhoea, particularly when it is protracted, the doctor should therefore ask about the nature, age and health of any pets in the home. Information about the possible aetiology may be obtained in this way, particularly in a child with pica.

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The changing face of school meals

The number of children taking sandwiches to school more than doubled (from 950,000 to just under 2 million) between October 1979 and October 1980. The number eating school meals dropped by over 1·3 million to about 4 million.

Source: *The British Nutrition Foundation, Newsletter No. 4,* April 1981.

Measuring incontinence

A simple method which uses beam balance scales, a portable timer, a large plastic-backed absorbent pad and tight-fitting pants has been developed to measure urinary loss in incontinent patients. Complete collection of all the urine lost was achieved in 220 (94 per cent) of 234 incontinent episodes in patients from three long-term-care wards. The attendant's subjective assessment of 'wetness', as used in other methods, was shown to be an extremely crude indicator of the degree of incontinence since the weight gain in pads judged subjectively as being 'wet' was anything from 0·7 to 341g and there was considerable overlap between the weights of pads judged to be 'dry', 'damp' or 'wet'.

Without an accurate method of measuring urinary loss in incontinent patients there is no way of assessing the benefits of treatment. We have developed a method that is accurate, easily learnt and simple to apply. It is also inexpensive, does not require any sophisticated equipment and reinforces the current practice of regular toileting which is routinely used to preserve incontinence.

Source: Walsh, J. B. & Mills, G. L. (1981). Measurement of urinary loss in elderly incontinent patients. *Lancet,* **I,** 1130-1131.