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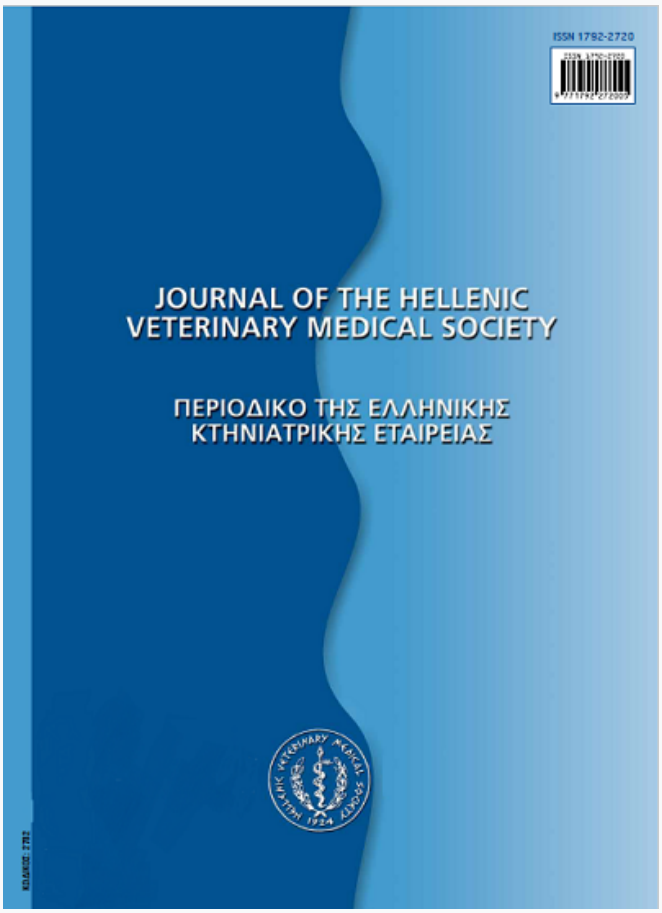

Παρέμβαση με κουνέλι ως ζώο συντροφιάς σε δημόσιο παιδικό σταθμό

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Research article
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Rabbit-assisted interventions in a Greek kindergarten

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Παρέμβαση με κουνέλι ως ζώο συντροφιάς σε δημόσιο παιδικό σταθμό

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ABSTRACT. Objective of the study was to confirm efficacy of intervention by means of a rabbit. We studied and recorded reactions of pupils and personnel in the presence of a rabbit in a comprehensive-type kindergarten. We selected a group of 39 clinically healthy pupils, 2.5- to 4-year-old, who were attending the kindergarten and used relevant weighted questionnaires for pupils and teachers. In the presence of the animal, pupils' ability of socializing, communicating and expressing emotions increased significantly. Teachers also found the results of the intervention particularly positive. It is concluded that rabbit intervention in a public kindergarten is feasible, low cost and does not require specialized personnel. The rabbit is a popular animal, familiar to children, hence the intervention was successful and effective as similar interventions with dogs, providing the chance to children to learn and become accustomed to animals.

Keywords: animal assisted intervention, dog, kindegarten, pet, rabbit

ΠΕΡΙΛΗΨΗ. Μελετήθηκαν και καταγράφηκαν οι αντιδράσεις μαθητών και μελών του προσωπικού σε δημόσιο νηπιαγωγείο. Επιλέχθηκε μια ομάδα από 39 κλινικά υγιή νήπια, ηλικίας 2,5 έως 4 ετών. Έγινε χρήση σχετικού σταθμισμένου ερωτηματολογίου για τα νήπια και τους εκπαιδευτικούς του νηπιαγωγείου. Με την παρουσία του ζώου, αυξήθηκε σημαντικά η ικανότητα κοινωνικοποίησης, επικοινωνίας και έκφρασης συναισθημάτων των νηπίων. Οι εκπαιδευτικοί θεώρησαν την

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παρέμβαση ιδιαίτερα θετική. Συμπεραίνεται ότι η εν λόγω παρέμβαση είναι εφικτή, χαμηλού κόστους, χωρίς απαίτηση για εξειδικευμένο προσωπικό. Αυτό συμβαίνει επειδή το κουνέλι είναι δημοφιλές, γνωστό στα παιδιά ζώο, ως εκ τούτου η επέμβαση ήταν επιτυχής και αποτελεσματική παρέχοντας στα παιδιά ευκαιρίες μάθησης και εξοικείωσης με τα ζώα.

Λέξεις ευρετηρίασης: κατοικίδιο ζώο, κουνέλι, νηπιαγωγείο, παρεμβάσεις με τη βοήθεια ζώων, σκύλος,

INTRODUCTION

Historical references refer to strong bonds between humans and animals and significant interactions between them (Sherpel, 2006). The last twenty years, specialized intervention methods, referred to as animal-facilitated activities (Nimer and Lundahl, 2006) have been developed. A large number of studies has shown that presence of pets in hospitals and institutions may have remarkably beneficial results to people. Among others, animals can be used in learning assistance, in improving the physical state of health, as well as in improving condition of patients, especially of children.

Objective of this study was to evaluate, to the best of our knowledge for the first time, the effect of a rabbit in healthy pupils of kindergarten age. The reactions of the pupils and the kindergarten's staff were recorded in the presence of the animal in the classroom.

MATERIALS AND METHODS

In total, 39 clinically healthy pupils, 2.5- to 4-year-old, who were attending the kindergarten, were included into the study and monitored for a period of six months, January to May, within the same school year. The program was carried out with the consent and permission of the governing body of the school.

A 2-year-old rabbit was also used. Before and during the interventions, the rabbit lived as a pet animal with a human family, in a controlled environment. The animal was under veterinary care and with confirmed freedom from zoonotic diseases. It was brought to the kindergarten twice weekly and remained there for around two hours on each occasion. During that period, food and water were freely available, which various stressful factors that may affect rabbits (Brandley et al., 2006, Brown-Harcourt 2006). There were controlled conditions throughout the transportation and the duration of the intervention, consistent with established international standards (Adbill & Juppe, 2000; Kaminski et al., 2002).

The animal was placed into the classroom in a transparent box and pupils could come into visual and/or tactile contact with it. The pupils followed a program of activities in the classroom and the garden. The following events of children-animal intervention were recorded: combing, feeding, petting, producing draws or crafts related to animals, group play. Moreover, the rabbit provided teachers with the opportunity for teachers to discuss with children regarding its nature, environment, family and social relations (Delta Society, 2005).

Pupils were asked to complete questionnaires, which evaluated improvement of socialization, communication, emotional expression and efficacy of contact of children with the animal. During completion of the questionnaires, assistance was provided by one of the authors (KL) or by the teachers of the kindergarten. Teachers also completed questionnaires reporting on the effects of contact of pupils with the animal. Questionnaires were completed by pupils and teachers on three occasions.

Analysis included the description of the data

Table 1. Mean values (±standard deviation) of the scales of socialization, communication and emotional expression during the study.

	Sequential measurements during the study			*P* for comparison among measurements
	1st	2nd	3rd	
Socialization	16.4±10.2	22.4±9.3	26.9±7.7	0.001
Communication	45.6±27.9	72.5±30.0	88.3±26.3	0.001
Emotional expression	26.3±11.5	33.0±10.1	37.9±7.8	0.001

and analysis of variance of recurring questionnaires. Before description and analysis of the questionnaires, reliability analysis was performed based on the coefficient of Cronbach's Alpha in a tenth scale of the repeated answers.

RESULTS

Results of reliability analysis of the questionnaires showed high reliability in the range of 0.955, 0.958 and 0.963 for each intervention.

Social activity and degree of interaction between pupils in the kindergarten increased (Figs 1 and 2). A similar trend was observed in the emotional expression of the children (Fig. 3). Results of socialization, communication and emotional expression are in Table 1. Each of these parametres (socialization, communication, emotional expression) is estimated by questions at ten-point percentage scale. The mean values and standard deviations of the results of the three parametres are shown in Table 1. A sequential, statistically significant, increase of scores of pupils was clearly evident during the study.

Effect of the contact of the pupils with the rabbit was positive, as observed by results of questionnaires completed by teachers. In the presence of the rabbit, pupils collaborated and participated in group activities (92%), with no discomfort or aggression (95%). Moreover, all pupils were found to remain calm (83%) and cheerful (85%). A large proportion

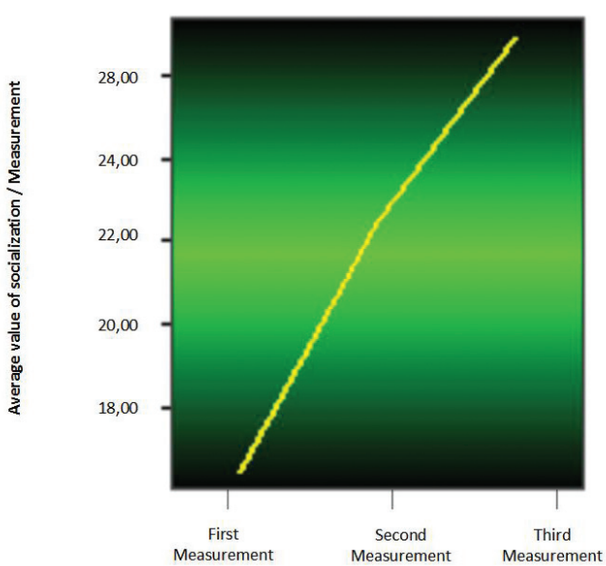

Fig. 1. Socialization of pupils in a kindergarten class throughout a study of animal intervention in the school.

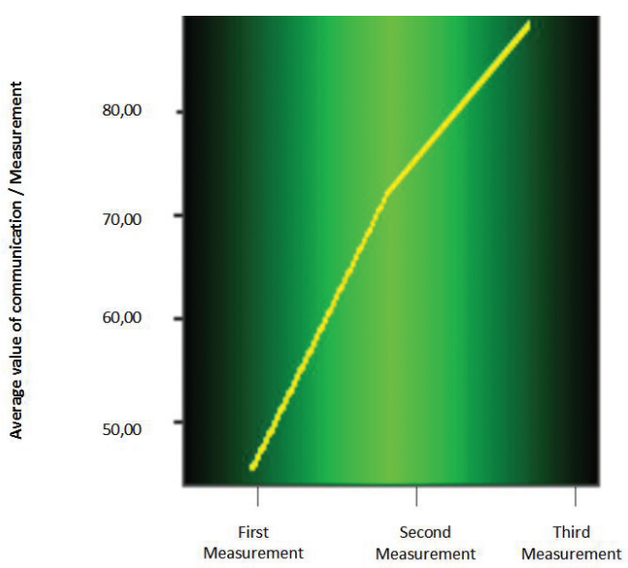

Fig. 2. Communication of pupils in a kindergarten class throughout a study of animal intervention in the school.

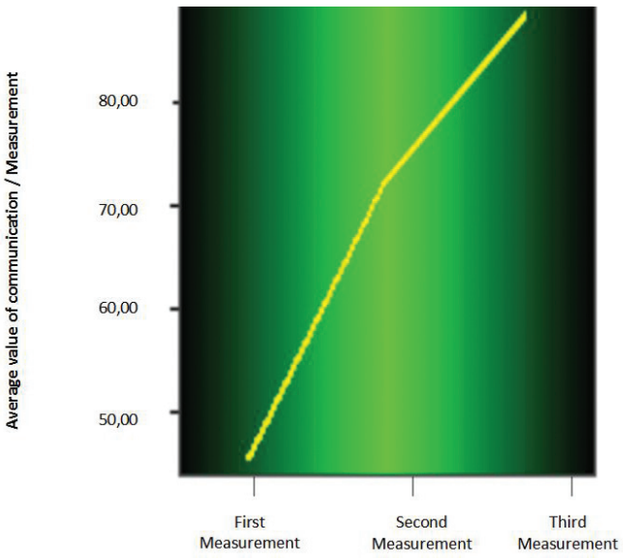

Fig. 3. Emotional expression of pupils in a kindergarten class throughout a study of animal intervention in the school.

of pupils (97%) showed that, in the presence of the animal, engaged better in classroom activities. Also a large proportion of pupils (80%) felt confident participating in activities with the rabbit. Almost all staff mentioned that presence of the animal brought pupils in more contact with nature, whilst a large proportion (85%) mentioned that pupils appeared to be happier in the presence of the rabbit.

During the study, no health problems of pupils, possibly caused by the interaction with the animal, were reported.

DISCUSSION

This intervention of a pet in a kindergarten for the first time in Greece was received positively, as shown by the increased rate of positive responses-observation questionnaires by both pupils and teachers. Selection and configuration of the questionnaires was conducted in accordance with guidelines and criteria of the Delta Society, an internationally trusted organization regarding interventions with animals (Delta Society, 2005).

Factors such as lack of qualified personnel and potential adverse reactions in presence of animals in school facilities led us to select a rabbit. The majority of reported studies in the literature on interventions are using mainly dogs. The majority of children of this age are familiar with rabbits (Shalev et al., 1996), fact which allows tactile, along with eye contact. It is a passive animal, not creating problems with sounds and also has a small size. Moreover, selection criteria include reduced costs for purchase, nutrition, monitoring and training compared to a dog. A rabbit would also not comprehend a specific name, thus children can name it as they wish. Unlike dogs, rabbits do not have 'owners', so children can feel as if they 'owned' it. Finally, rabbits can be practically 'immortal', as they can be replaced with another individual of similar size and colour.

Condoret (1978) observed an increased interest of children, aged 4- to 5-year-old in kindergarten classes, in participating in the activities and accepting school environment with appearance of animals, especially dogs. Similar findings were recorded in the present study; pupils participated more in games, expressed feelings, shared information and could better understand various concepts in the presence of the animal in their classroom, as it has been reported in a previous study (Rud et al., 2003). The study indicated that children freely express their feelings in the presence of rabbit, as evidence by their own or their teachers' responses.

Arkow (1981) mentioned that a dog could help children socialize and communicate better with each other. The same findings were also evident in the present study. Presence of the rabbit gradually increased socialization and communication abilities of the children. In the literature, a high proportion of (84%) of children who felt ennui started to have better reactions when they got evolved with activities related to dogs (Condoret, 1978; Kaye, 1984). Presence of an animal in a school environment is an aid in learning regarding nature (Rud et al., 2003).

In our intervention, teachers stated that presence of the rabbit aimed children to come into contact with nature.

CONCLUDING REMARKS

The rabbit can become a companion of the pupils, helping them to adapt to an unfamiliar environment, to join the group and to obey rules of diet and behavior. Pupils are able to come into contact with the physical world, learn effortlessly and play and express freely their feelings. The intervention with a rabbit as a pet in a school environment can be easy and can improve conditions of pupils in kindergartens, offering them the opportunity to get closer to nature. Moreover, selection of a rabbit is cost effective in comparison to costs of using dogs. It also offers additional advantages, including the ability of giving various 'names' to the animal, as well as the animal having many 'masters' and being replicable, i.e., practically 'immortal'. The positive results of the intervention in a kindergarten led to the decision to follow up the work in a paediatric hospital in Athens with critically ill children to test effects of animal intervention in a different environment.

CONFLICT OF INTEREST STATEMENT

The authors report no conflict of interest.

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