

In a pre-post design, the intervention group was evaluated in comparison to a respective control group. Twenty-seven students, 11–14 years of age, participated in the program. The animal-assisted training, conducted by a multi-professional team, took place in school on a weekly basis. To evaluate the effectiveness of the program regarding emotional competences, results on research parameters such as emotion regulation and emotion recognition were evaluated. The mentioned indicators were obtained from the treatment and control groups before and after training. The SEE (Skalen zum Erleben von Emotionen Behr & Becker, 2004), a questionnaire designed to analyze how people perceive and deal with their own emotions, was used to measure emotional competences. Additionally, self-esteem and well-being of the participants were integrated using the SPPC-D (Self-Perception Profile for Children Asendorpf & Aken, 1993). The data was analyzed by means of statistical inference procedures.

Improvements were found on various indicators of emotional competences among the participant group. It was shown that the adolescents developed greatly in their regulation of emotions ( $t(41) = 4.765, P < 0.001, d = 1.49$ ). They also learned how to better accept their own emotions and not be ashamed of them ( $t(36) = 2.239, P = 0.016, d = 0.75$ ). Concerning emotion recognition, they were able to reduce the instances of lack of emotions ( $t(36) = 1.842, P = 0.037, d = 0.61$ ) and establish an improved interpretation of body-related signals ( $t(37) = 3.416, P < 0.001, d = 1.12$ ). Self-esteem and well-being of the participants also underwent significant positive changes during the training.

The results of this study indicate that the dog-assisted group training improves the emotional competences of the participants, especially concerning emotion regulation and recognition. In addition, positive effects on self-esteem and well-being of the students were shown. The present study was able to demonstrate that MTI contributes to health promotion and helps young people develop essential life skills.

**Key words:** emotion regulation; emotional competences; animal-assisted training; human-animal relationship

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## 83

### ENHANCING EMOTION REGULATION AND RECOGNITION AMONG FIRST GRADERS THROUGH ANIMAL-ASSISTED GROUP TRAINING

Karoline Turner\*, Birgit U. Stetina, Eva Burger, Tamara Lederman Maman, Ursula Handlos, Ilse Kryspin-Exner  
Faculty of Psychology, University of Vienna, Austria  
\*Corresponding author: karoline.turner@univie.ac.at

Numerous studies have documented the positive effects of emotionally competent behavior on personal relationships, work life, health, and contentment in life. In particular, emotion regulation and recognition are part of the requirements to interpret feelings and to implement the use of diverse, adequate, and healthy strategies. Animals, especially dogs, can help people to cope with their emotions. They can assist individuals in approaching negative feelings more consciously as well as in coping with these emotions (Hart, 2000). This study investigated whether animal-assisted competence training can influence the use of emotion regulation strategies and the ability to recognize emotions.

In a pre-post design, the intervention group of 19 first graders, aged 5 to 7, was evaluated in comparison to a respective control group. The intervention group participated in a dog-assisted competence training session, and the control group received no training. The results of the FEEL-KJ (Questionnaire Emotion Regulation) and the results of the VERT-K (Vienna Emotion Recognition Tasks) were analyzed to evaluate emotion recognition. The hypotheses regarding the changes in emotion regulation and emotion recognition were tested using *t* tests. Cohen's *d* was used as a measure of effect size of the outcome, independent of sample size.

Overall, the results for the intervention group demonstrated significantly larger improvements in adaptive strategies than the control group [ $t(35) = 1.84, P = 0.037, d = 0.63$ ]. Significant and relevant results were found regarding the use of problem-orientated action [ $t(35) = 2.77, P = 0.004, d = 0.94$ ] and reappraisal [ $t(35) = 3.16, P = 0.002, d = 1.07$ ]. In addition, the intervention group significantly enhanced the strategy "activation of social support" [ $t(35) = 1.927, P = 0.03, d = 0.65$ ]. The treatment group also increased their skills in emotion recognition regarding neutral facial expressions [ $t(35) = 1.956, P = 0.029, d = 0.66$ ]. They needed less time to recognize joy [ $t(35) = -1.530, P = 0.067, d = 0.52$ ] and sadness [ $t(35) = -1.980, P = 0.028, d = 0.67$ ].

The results of this study confirm what previous studies on animal influence have indicated. Children are able to regulate their emotions, and they show improvements in empathy and in interpreting emotions. However, unlike prior studies that aimed at surveying the effects on students of a dog's presence in the room, the present study included an intervention. The dog-assisted training MTI improves emotional competence and seems to be a promising way to develop essential life skills and personal resources.

**Key words:** emotional competences; emotional regulation; animal assisted therapy; human animal interaction; animal assisted intervention

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84

## THE DOG OR ITS MUZZLE AS A SIGNAL OF DANGER FOR HUMANS

Anaïs Racca<sup>1,\*</sup>, Claude Baudoin<sup>1</sup>

<sup>1</sup>Laboratory of Experimental & Comparative Ethology, University of Paris, France

\*Corresponding author: [aracca@lincoln.ac.uk](mailto:aracca@lincoln.ac.uk)

In France, dogs of specific breeds as well as dogs trained to attack (police, security services, etc.) have to be muzzled in public areas. A dog wearing a muzzle may constitute an ambiguous cue for humans as it indicates that the dog is potentially dangerous while at the same time that the dog's potential danger is controlled. The aim of our present study was to determine whether a muzzled dog would induce a greater fear response in humans than the same non-muzzled dog. We were interested specifically in the German shepherd dog as it is one of the typical breeds used by police and security services, but also very popular as a pet.

We followed a dog owner (male, 55 years of age, without any particular physical characteristics, neutral dress) and his German shepherd dog, with or without a muzzle, walking down the streets of a small French city and we observed the behavior of 41 adult passers-by who came into the dog's path ( $n = 20$  when the dog was muzzled,  $n = 21$  when the dog was not muzzled). The dog owner was not known to the passers-by. We focused on 3 behaviors potentially indicative of fear, relating to either avoidance or vigilance: (1) movement away from the dog while passing by; (2) looking at the dog while passing by; and (3) turning around to look at the dog after passing by. Each behavior was recorded as a binary outcome (i.e., presence or absence of the behavior).

The analysis of the frequency of each behavior via Pearson's  $\chi^2$  test showed that when people passed by the dog, they moved away significantly more often when the dog was muzzled (50%) than when he was not muzzled (19%) ( $P < 0.05$ ). Likewise, passers-by turned around to look at the dog significantly more often when he was wearing a muzzle (52%) than when he did not wear it (0%) ( $P < 0.001$ ). On the other hand, passers-by did not look more often at the dog while they passed him when he was muzzled (75%) than when he was not (52%) ( $P > 0.05$ ). We found a significant association between the behavior to move away and the one to turn around when the dog was muzzled (Fisher exact test,  $P < 0.05$ ).

Our findings showed that a muzzled German shepherd dog induced more fear-related behaviors in the observed passers-by than the same dog not muzzled. Moreover, as the persons who moved away to avoid the muzzled dog were more likely to also turn around to look at him, it seems that this last behavior is indeed probably linked with fear (hypervigilance) and not only with interest or curiosity. This study suggests that, paradoxically, a muzzled dog is considered as more dangerous by humans than a non-muzzled dog, whereas only the latter can be a real source of danger.

**Key words:** human–dog interaction; human behavior; fear behavior; muzzle; German shepherd dog

85

## THE IMPORTANCE OF DOGS HAVING CONTACT WITH CHILDREN DURING THE CANINE SOCIALIZATION PERIOD

Sato Arai\*, Mitsuaki Ohta

Laboratory of Effective Animals for Human Health, Azabu University Graduate School of Veterinary Science, Japan

\*Corresponding author: [satovvv6@yahoo.co.jp](mailto:satovvv6@yahoo.co.jp)

It is well known that dogs have positive effects on the development of children, and the opportunities for dogs to have contact with children, such as in animal-assisted education programs, have been increasing. However, some dogs have difficulty getting along with children.

Thirty-one pairs of pet dogs and their owners were divided into 3 groups. The dogs in Group 1 ( $n = 10$ ) had been in contact with children during the canine socialization period (between 3 to 12 weeks of age) whereas those in Group 2 ( $n = 11$ ) had been in contact with children after this socialization period, i.e., after the age of 4 months. Group 3 consisted of 10 dogs that seldom had had contact with children. Three volunteer 9-year-old girls who had never met the subject dogs were used to test the dogs' reactions to children. A girl entered the experimental room where a dog and the owner were waiting. As soon as she entered the room, the girl: (1) called the dog's name; (2) walked to the dog; and (3) ran around the dog while calling the dog's name. Each stimulus was given for 2 minutes, and there was a 5-minute rest between each stimuli. We evaluated the dogs' responses by analyzing their behavior and heart rate (HR).

We used two-way repeated-measures ANOVA and the Bonferroni post-hoc test for multiple comparison to analyze differences in the HR among the 3 groups in addition to intra-group differences. The Kruskal-Wallis test, among others, were used to analyze the dogs' behaviors.

When the dogs in Group 1 were given stimuli 3, their HR decreased significantly (Group  $F(2,18) = 5.744$ , Stimulus  $F(2,18) = 5.147$ , Group–Stimulus interaction  $F(4,18) = 5.580$ ,  $P < 0.05$ ), compared with any other stimuli, and significant differences in HR between the experimental groups were observed (Group 1 vs. Group 2:  $-17.13 \pm 2.92$  vs.  $4.00 \pm 3.35$ ,  $P < 0.05$ ; Group 1 vs. Group 3:  $-17.13 \pm$