

The shelter dog in a One Health view. A model kennel in Southern Italy

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One Health is a collaborative, multisectoral, and transdisciplinary approach with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants and their shared environment.

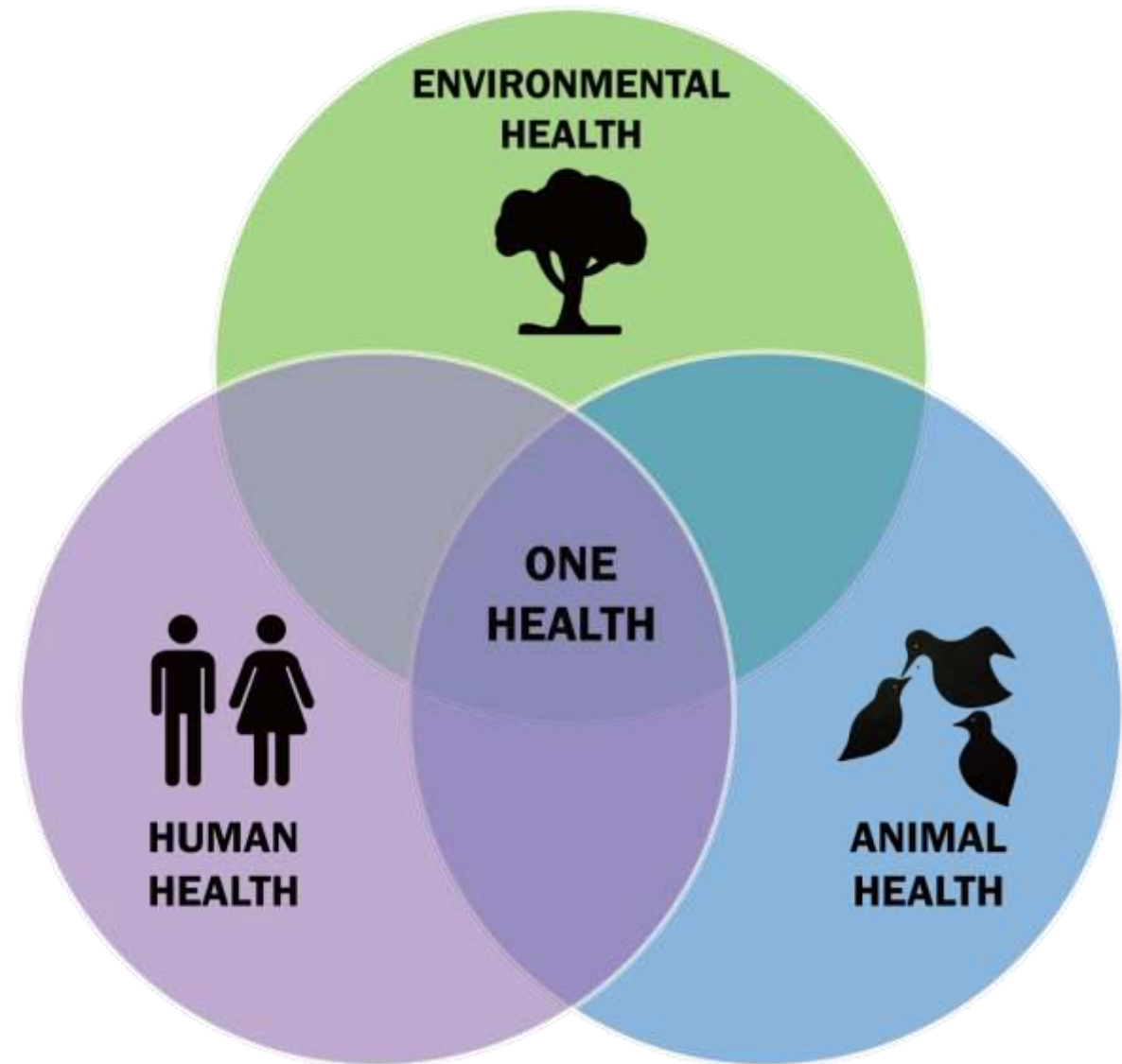


Fig. Wikipedia

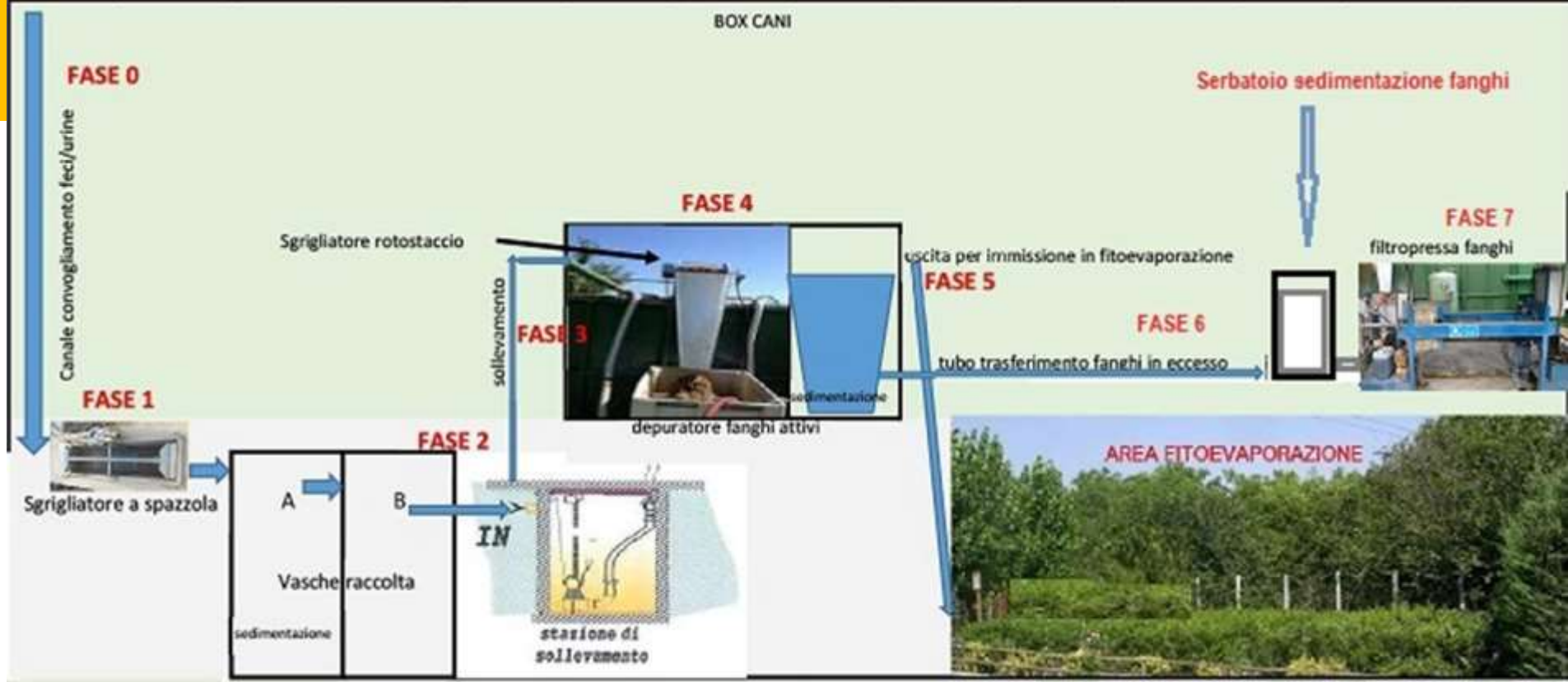


Fig. Naples and Mt.Vesuvius

The shelter dog of our research is in southern Italy and represents a model multifunctional structure aiming towards the One Health perspective

A shelter dog for Environment

The shelter uses chemical-physical purification areas and phytovaporation of wastewater, thus reducing environmental pollution of the area



CICLO SMALTIMENTO RIFIUTI PROVENIENTI DALLA PULIZIA BOX

- Fase 0> Canale convogliatore
- Fase 1> Sgrigliatore a scope
- Fase 2> vasche raccolta (IMOF)
- Fase 3> Sgrigliatore a maglie sottili
- Fase 4> Processo depurazione
- Fase 5> Fitoevaporazione
- Fase 6> Serbatoio sedimentazione fanghi
- fase 7> immissione in filtropressa

WASTE DISPOSAL CYCLE

The disposal system for cleaning the boxes is carried out in the following steps:

All boxes are structured with sewage collection channels that convey in the same tube "FASE 0"; it ends up in a sweeper "FASE 1" in order to separate any solids and hairs. In this way, only the liquid arrives in the IMOF collection tanks "FASE 2". Then the liquids are conveyed, with a special pump, in a further very thin mesh cleaner "FASE 3" for subsequent entry into the purifier. After the purification process "FASE 4" with activated sludge, the purified liquid, for overflow, is introduced "FASE 5" into the phytovaporation.



WASTE DISPOSAL CYCLE

The process involves the systematic control of the sludge with its registration on special forms in order to verify the status of the sludge and any excesses.

In this case, they must be removed in the appropriate tank “FASE 6” to allow sedimentation and subsequent entry into the filter press “FASE 7”.

The sludge produced by the filter press, the reduction of which is about 80%, are disposed of by specialized company with CER code 19.08.13



Solar panel system

The shelter dog is equipped with a photovoltaic system of 50KW, that covers 80% of the needs.

This energy is used for heat lamps in indoor areas of the box.





A shelter dog for Dog

The box has a sleeping area, an indoor covered area and an outdoor uncovered area. The sleeping area is heated and accessible with a cat crawler for the entrance of the dog and is positioned in the outdoor covered area. In addition, the outdoor area includes a movable shade cover for the warmer months.

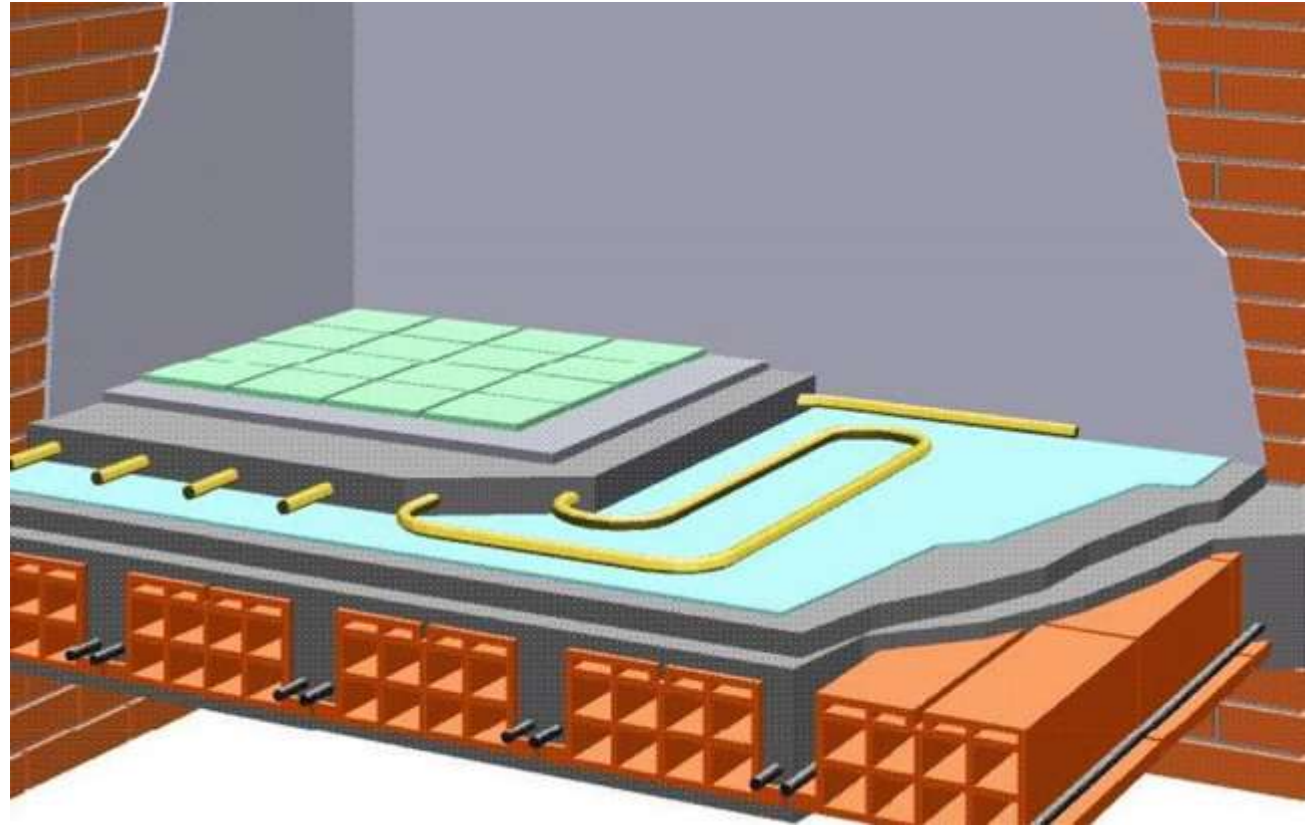


Fig. Underfloor heating

SPRAYING PLANT

Spraying system allows to obtain three benefits:

- spraying of odour abatement products;
- nebulization for environmental disinfection;
- nebulization of water in heat periods where the temperature in certain hours reaches high limits.





From dump to ...sentient creatures

Dogs housed there are normally included in training courses with the aim of increasing the skills to be used in different human social contexts and family. It normally relies on the initial on a careful behavioral assessment and categorization by veterinary behaviorist, in order to guarantee the most suitable life conditions for the animals in the kennels, increase the chances of adoption and involve dogs in projects tailored to their predispositions.

All activities- such as dog trainer course- allow an improvement well being of dogs and the possibility of adoption.

An experience in shelter dog during dog training course

“How to improve interspecies socialization”



Are you young? You are free!

Age-dependent effect upon dog adoptions from 2015 to 2020

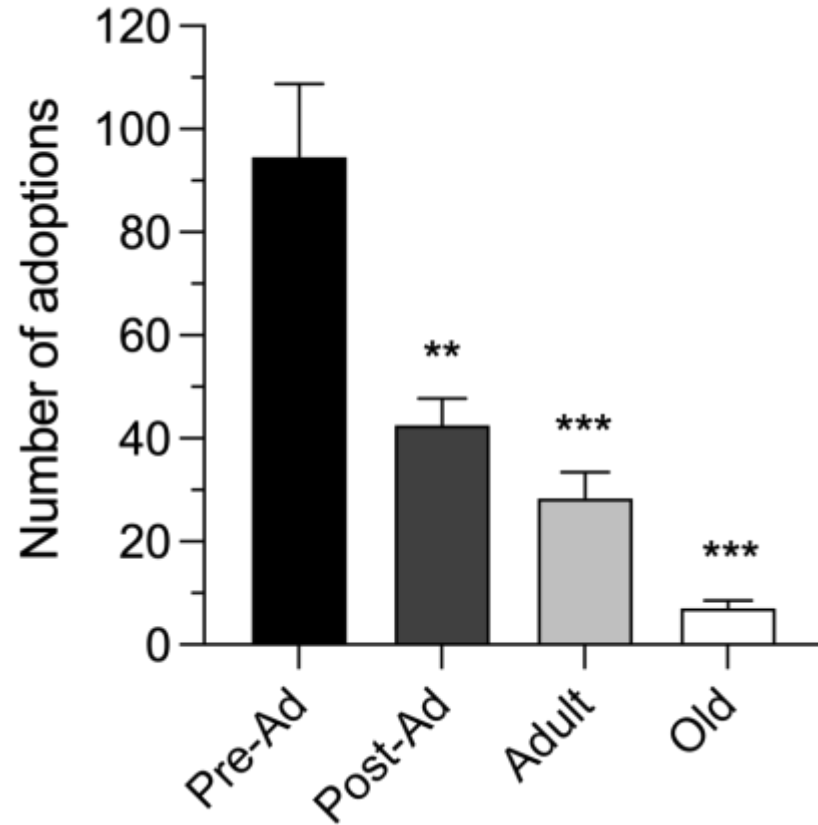


Figure 1. shows the trend by age, adoptions from 2015 to 2020.

Pre- Ad: 7 to 11 months.

Post- Ad: 1 to 2 years.

Adult: 3 to 8 years.

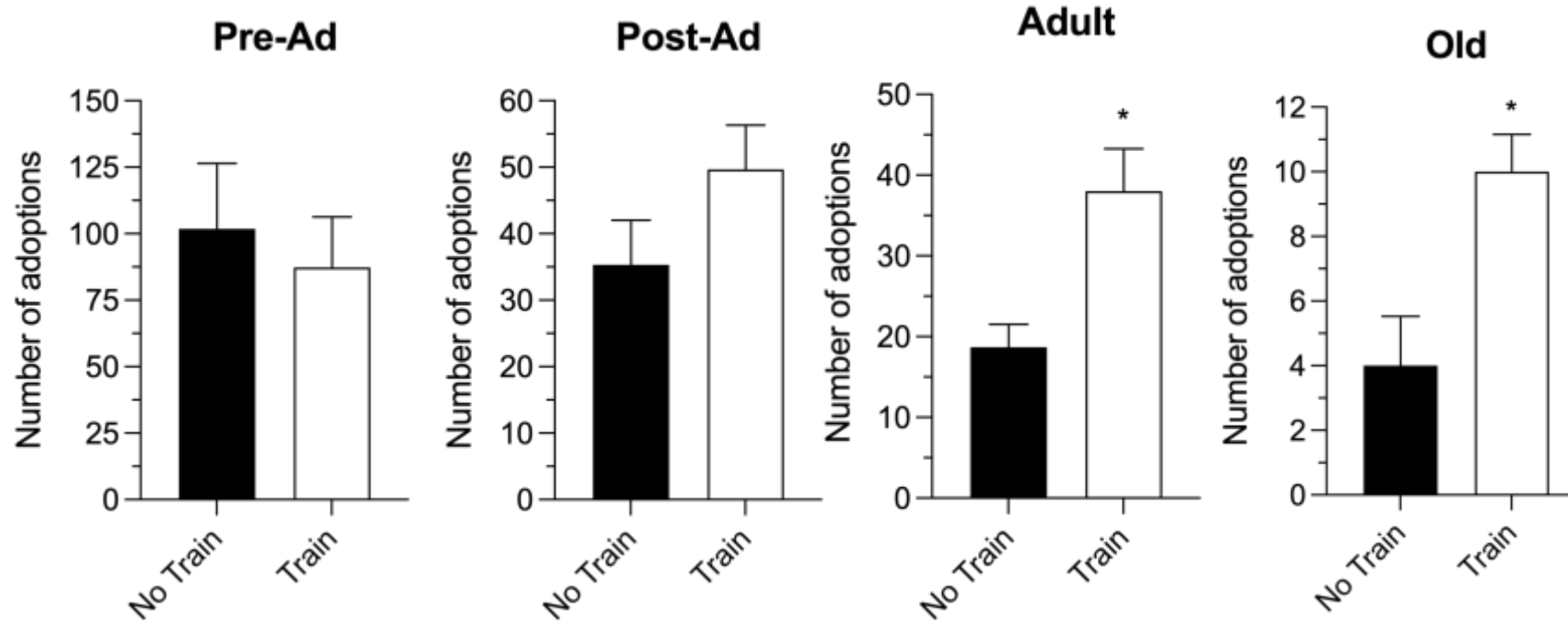
Old: 9 to 17 years.

p<0.001; *p<0.0001, One-way ANOVA, followed by Fisher's post-hoc comparison

These data are in line with literature: young dogs are more easily adopted. The longer puppies stay in the shelter, the lower the chance that they will be adopted. The studies of Cain et al. (2020) have reported that, as dogs increase in age, their chance for adoption decreases, thus making puppies the most adoptable age group. It has also been previously reported that puppies have the shortest length of shelter stay.

Are educated dogs more attractive?

Impact of educational program of dogs over number of adoptions



*p<0.05; Unpaired Student's t test

Figure 2.

From 2015 to 2017 dogs housed were not included in training courses (No Train).

From 2018 to 2020 dogs housed were normally included in training courses (Train): have participated in a dog trainer course, for 4 months .

There is no statistical significance in the group "Pre- Ad" between No Train and Train. However, there is a tendency to increase; this can be explained by the fact that young dogs have a better chance of being educated, regardless of their background.

About "Adult group" and the "Old group" there is statistical significance: the training affects the greater possibility of adoption.

Enrichment programs improve desirable behaviors and decrease undesirable behavior in shelter dogs, which may enhance welfare as shown by Herron et al. (2014).

A shelter dog for humans' benefit

Several studies have reported positive psychological and physiological effects of prison-based animal programs and animal assisted interventions with inmates, which confirm the general idea that human–animal interactions contribute to human health and well-being

“Inmates involved in the dog assisted therapy sessions significantly improved their social skills, reducing craving, anxiety and depression symptoms compared to the control group” (Contalbrigo et al., 2017).

In addition, “...the interactions with humans and the activities carried out in a different environment could improve the welfare of dogs housed in kennels” (d’ Angelo et al., 2021).

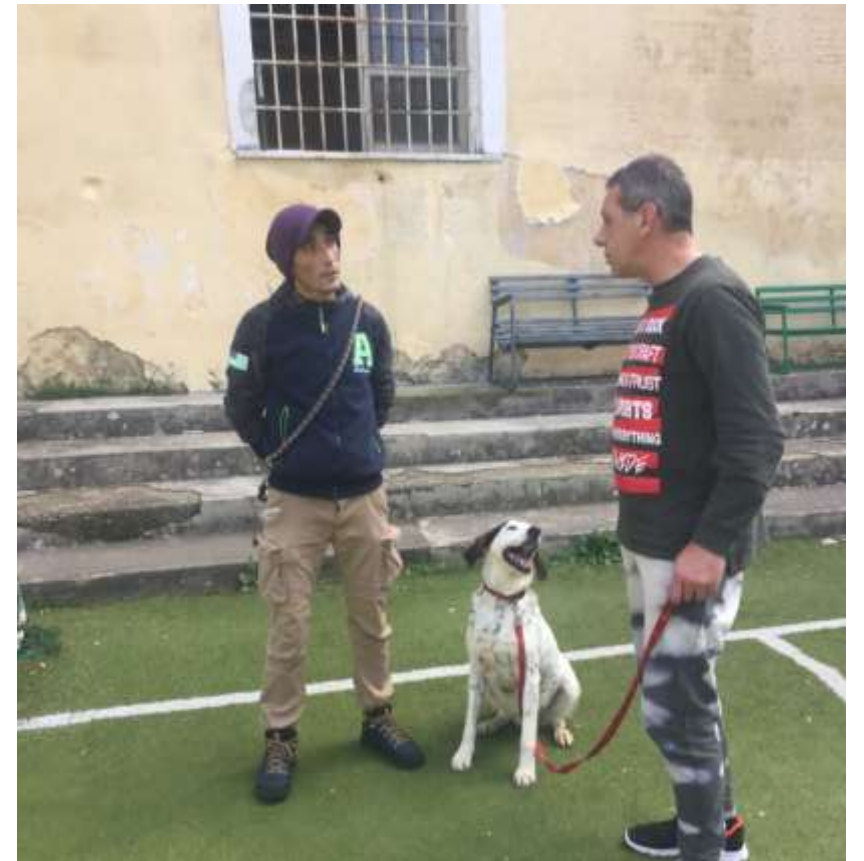


Fig. Shelter dogs involved in an AAI program with inmates in Eboli



Fig. Dog Park Campus

The benefits of human–animal interaction on children’s socio-emotional development and wellbeing are documented in a growing body of evidence (Purewal et al., 2017).

Positive interactions with companion animals, whether they occur in family, recreational, educational or clinical contexts, can improve emotion regulation in children, enhancing their empathic skills and helping them mitigate stressful emotions (Tomlinson et al., 2020).



Animal Assisted Activities: dog workshops under supervision of dog trainers and veterinarians

- The AAA projects in the school promoted precautionary behavior when approaching a dog and advice for handling a dog safely and confidently. The workshops consisted in a different demonstration of various “rules of behavior” around dogs, e.g., how to approach and pet a dog, how to read the dog’s mood, and how to recognize a friendly, angry, or frightened dog. Children were instructed to ask the dog owner for permission, avoid eye contact, not to disturb the dog while sleeping or eating, to move slowly and quietly near dogs.
- In accord with Kienesberger et Al., 2021 a broad-based prevention program for primary school children can effectively decrease the severity of dog bite injuries in children.

Visual communication: how to improve skills of children about dogs.

An example of workshops

«I'm relaxed»



«I'm aggressive»



«I'm afraid»



«I want to play with you»



«I'm aggressive because i'm afraid»



«Go easy on me»



Discussion & Conclusions

Today, the kennel is considered one of the crucial concerns of the human-animal relationship, since it is very often regarded as animals dump, a place where dogs exile and thus a burden on society. Therefore, drawing up strategies for a new “kennel conception”, as an added value for human society, environment and dogs as well is mandatory.

Accordingly, this shelter dog in southern Italy represents a model multifunctional structure aiming towards the One Health perspective; a single health for animals, humans and environment is the task for the shelter approach.

One World, One Medicine, One Health



WINNER EUROPEAN **EMAS** (Eco-Management and Audit Scheme , made by European Community) AWARD 2010

ONE
HEALTH



Thank you so much for your attention

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