Technical report
on the study
of dog-assisted
therapy in prisons
2016-2017

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1. General information and layout of the study

Introduction

Animal assisted therapies (TAA) enjoy growing social acceptance. Nevertheless, due to a lack of sufficient scientific studies on TAA in all fields where it is applied, its effects are often questioned as well as whether these are comparable with other strategic therapies aimed at achieving certain goals. Therefore, with this study two objectives were postulated with regards to a TAA rehabilitation programme for inmates of Spanish prisons:

- Verify if the results of TAA are comparable with other kinds of treatments used in the rehabilitation programmes in prisons.
- Understanding some of the benefits of TAA for prison internees.

Population

A total of 212 internees from 10 penitenciary centres all over Spain have participated, randomly divided into 4 groups:

- Group TP- Therapeutic (TAA with dogs + Psychological intervention): n= 51
- Group P- Only TAA with dogs: n= 56
- Group T- Only psychological intervention: n= 49
- Group C- Control (standard rehabilitation interventions in prisons): n= 56

Intervention

- A programme of 16 weekly sessions of 1 hour duration over a period of 4 months.
- The groups P and T receive a total of 16 hours of intervention.
- The group TP receives a total of 32 hours of intervention.

Evaluation

- Participants were evaluated at three moments:
    - Before the start of the programme (T0).
    - A the end of the programme (TF).
    - During a follow-up 3 months after the end of the programme (TS).
- At each of these 3 moments the following measures were taken:
    - Self-Esteem Scale (Rosenberg). (Vázquez-Morejón et al., 2004)
    - Impulsiveness Scale (Plutchik). (Páez et al., 1996)
    - Anxiety Scale (Hamilton) (Lobo et al., 2002):
        - Psychological.
        - Somatic.

- Behavioural assessment:

The concept of *behavioural assessment* encompasses the following parameters of an individual's functioning:

  - Emotional stability.

  - Adaptation to surroundings.

  - Interpersonal relations.

  - Participation in activities.

Characteristics of the sample

Various characteristics of the initial sample deserve to be emphasised:

- Before we started our study, there were no statistically significant differences between the 4 intervention groups with regards to the respective parameters of psychological and behavioural assessment. Therefore, we may assume we set out with initially comparable samples in the 4 groups.

- The members of the control group would not conduct the interventions specific to the programme of dog-assisted therapy nor the psychological intervention, but they did participate in other activities which formed part of the standard rehabilitation process in Spanish prisons.

- As a limitation, there is a high variability of the various psychological measures between individuals, which makes it difficult to obtain significant results in some fields, for instance anxiety or impulsiveness.

- On the other hand, one must take into acount that we started with a sample in which the values of impulsiveness and self-esteem were within normal limits for the scales used and not considered pathological or worrisome. Given that we started with values which are considered normal, no great changes in these two aspects can be expected.

  - We started off with an initial sample without serious problems with self-esteem (average punctuation of 30.39 out of 40 on the Rosenberg scale, which indicates high self-esteem), making it difficult to modify a variable which isn't seriously affected.

  - We started off with an initial sample without serious problems with impulsiveness (average punctuation of 18.66 on the Plutchik scale, with scores above 20 considered high impulsiveness). As we were working with a non-problematic variable in the initial population, it wouldn't be easily modified through therapy.

- With regards to anxiety, we did initially find high levels of anxiety in the population. Anxiety therefore is a variable which may be expected to improve in this sample.
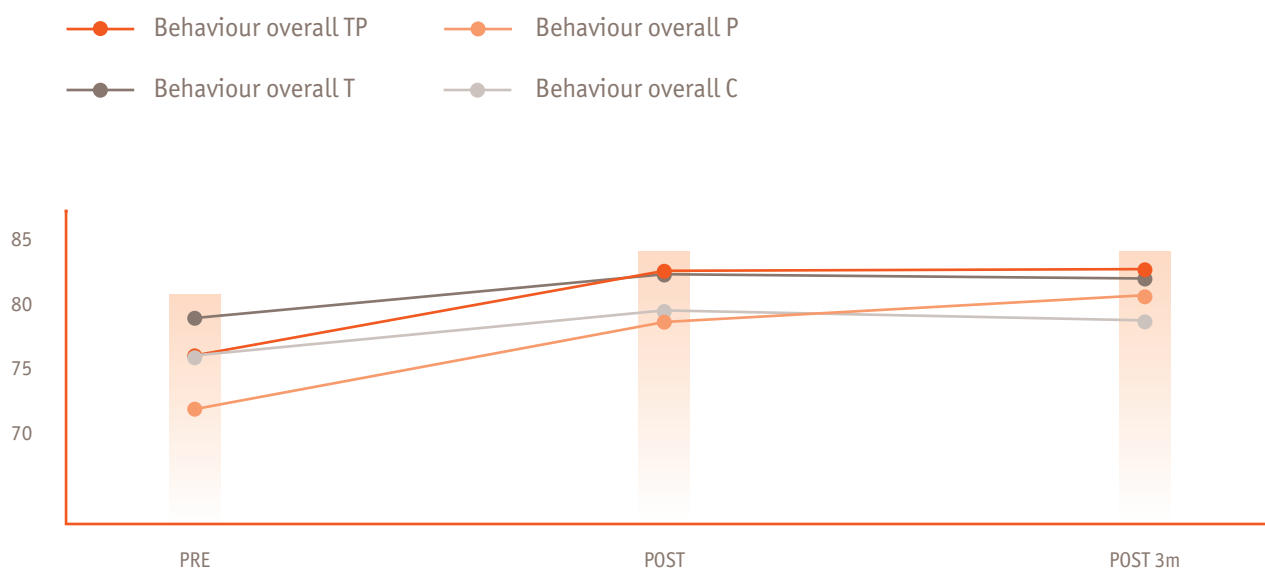
2. Results after completing the intervention

Summary of the results

- When we compare the improvements in the various measures that we took (self-esteem, impulsiveness, anxiety and behavioural profile) in the various groups (TP, P, T and C), both immediately after finishing the intervention (TF) and 3 months later (TS), there are no significant differences between the groups (Kruskal-Wallis Test and Dunn Test for multiple crossing; $p<0.05$). This implies we cannot confirm there are different results between the groups. This leads us to the following conclusion: **the dog-assisted therapy is an intervention comparable in its positive effects (modifying behaviour and anxiety) with other rehabilitation interventions aimed at the social reintegration of inmates as they are performed in Spanish prisons.**
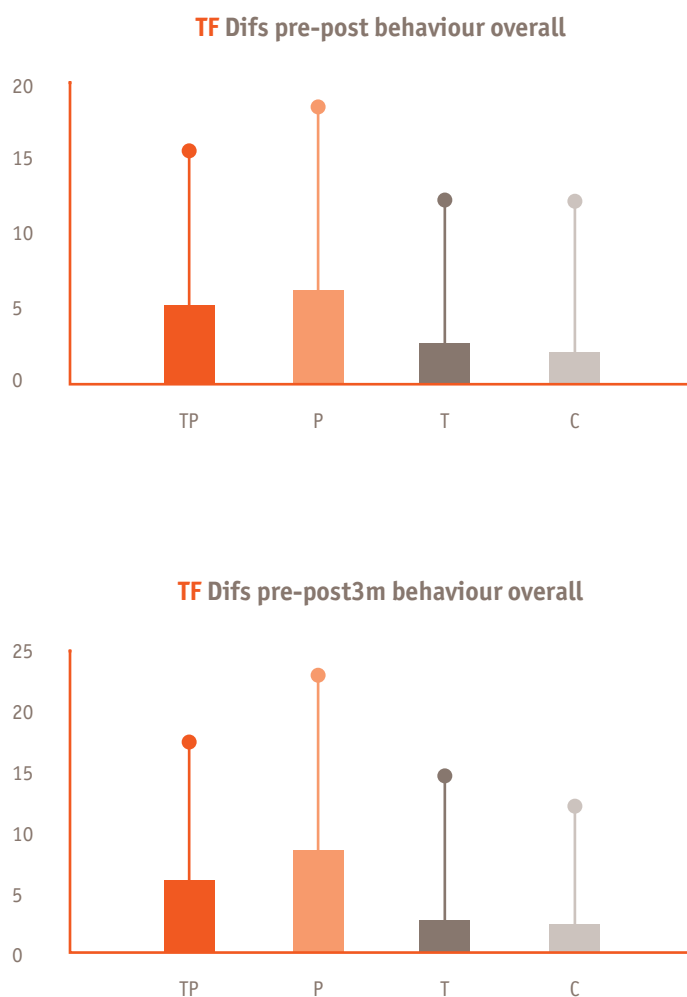
Evaluation of behaviour

- Significant improvements in behaviour (Wilcoxon test; $p<0,05$) were found in the 4 groups (TP, P, T and C) at the end of the research (TS), which may indicate to us that the four types of intervention are effective in achieving this goal. See figure 1.

Figure 1. Evolution of the global behavioural parameter in the 4 research groups.

• In general, we need to take into account that when comparing improvements in behaviour between the different groups (TP, P, T and C), both immediately after finishing the intervention (TF) and 3 months later (TS), there are NO significant differences between the groups (Kruskal-Wallis Test and Dunn Test for multiple crossing; $p < 0.05$). Therefore, there seem to be no different results in behavioural changes between the groups, implying that all the types of intervention that are being applied can be considered comparable. See figure 2.
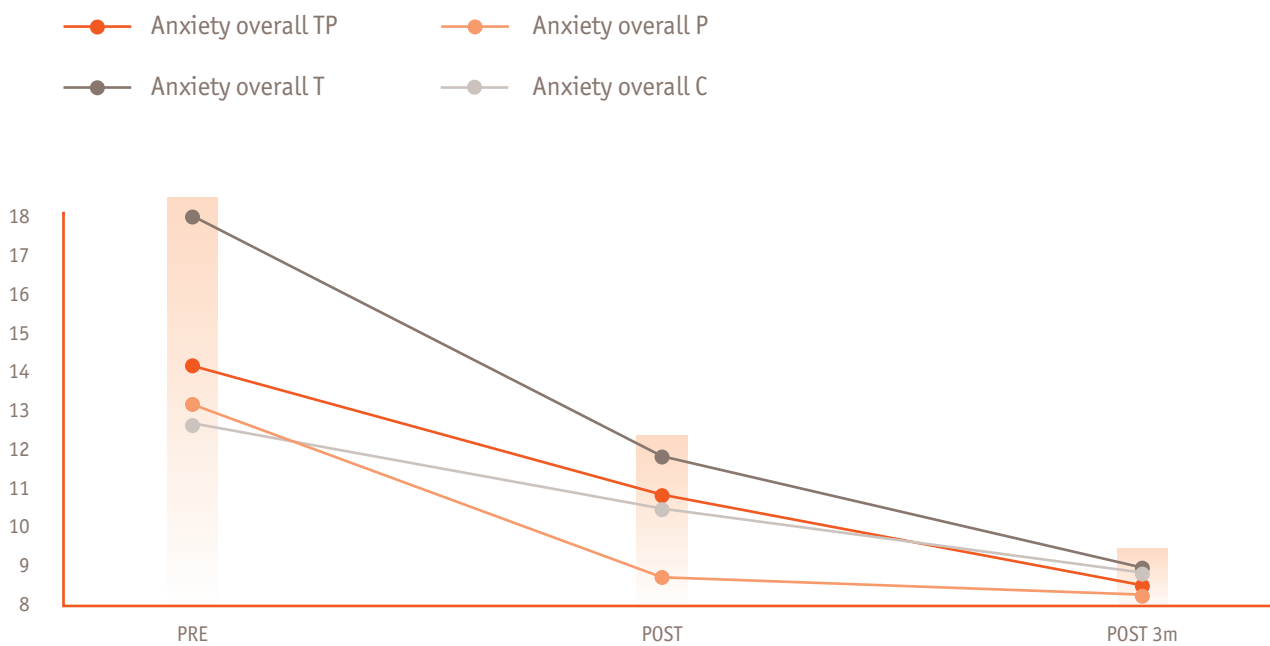
Figure 2. Comparing the global improvement in behaviour in the four research groups and at 2 different moments, immediately after finishing the intervention (TF) and 3 months later (TS).

TF Difs pre-post behaviour overall

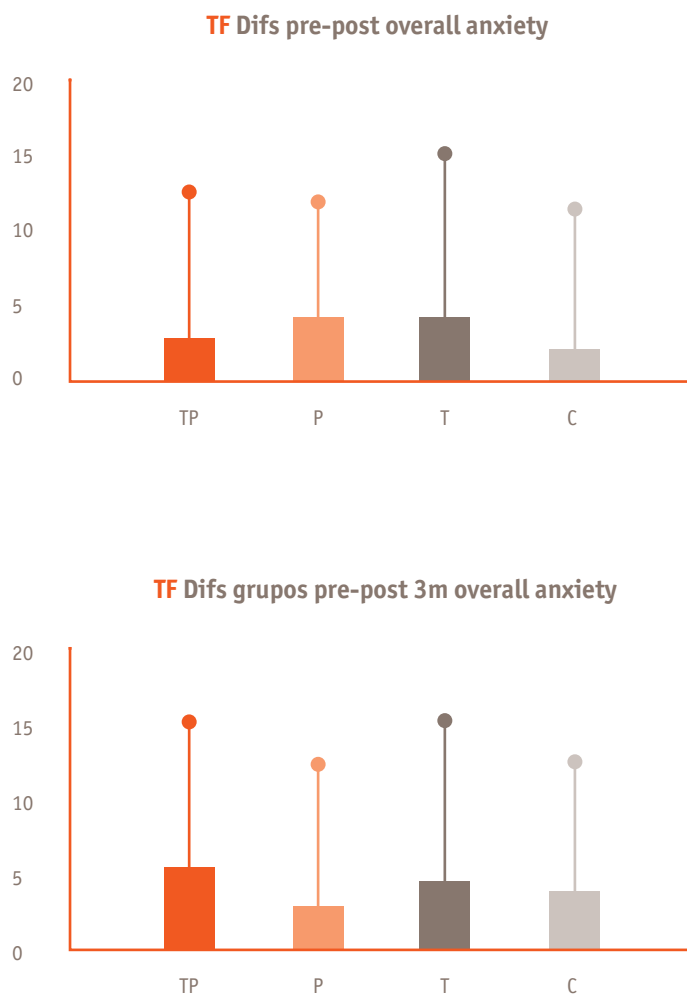**TF** Difs pre-post3m behaviour overall

Anxiety

- In the groups TP, P, and T significant reductions in anxiety have been found at the end of the 4 month intervention programme (TF) (24%, 36% and 33%, respectively), while 3 months later (TS) all groups (TP, P, T and C) show significant improvement in overall anxiety (Wilcoxon test; $p < 0,05$). We may conclude that all types of intervention applied in prison support a reduction in anxiety, with the fastest results obtained in interventions with dogs and psychological therapy. See figure 3.

Figure 3. Evolution of the overall anxiety parameter in de 4 research groups.

- In general, one should keep in mind that in comparing the reduction in anxiety (overall, psychological and somatic) between the different groups (TP, P, T and C), both immediately after finishing the intervention (TF) and 3 months later (TS), there are NO significant differences between the groups (Kruskal-Wallis Test and Dunn Test for multiple crossing; $p < 0.05$). Therefore, there seem to be no different results in anxiety reduction between groups, implying that all the types of intervention that are being applied to improve the levels of anxiety can be considered comparable. See figure 4.

Figure 4. Comparing improvement in anxiety in the 4 research groups and at 2 different moments, both immediately after finishing the intervention (TF) and 3 months later (TS).

TF Difs pre-post overall anxiety

TF Difs grupos pre-post 3m overall anxiety

3. References

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