

Effects of Animal Assisted Interventions and Pet-Robots to reduce depression among nursing home residents

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Effects of Animal Assisted Interventions and Pet-Robots to reduce depression among nursing home residents: a Bayesian Network Meta-Analysis of Randomized Controlled Trials

Background

- Animal-Assisted interventions (AAI) are considered effective in reducing depression among nursing home residents.
- There are some challenges to overcome regarding the feasibility and implementation of AAI in nursing homes. Therefore, interventions with Pet-Robots (IPR) may be considered.
- To date, there is a lack of evidence whether IPR could be seen as the appropriate solution when AAI are not feasible, e.g., reasons of safety for the resident or the animal.

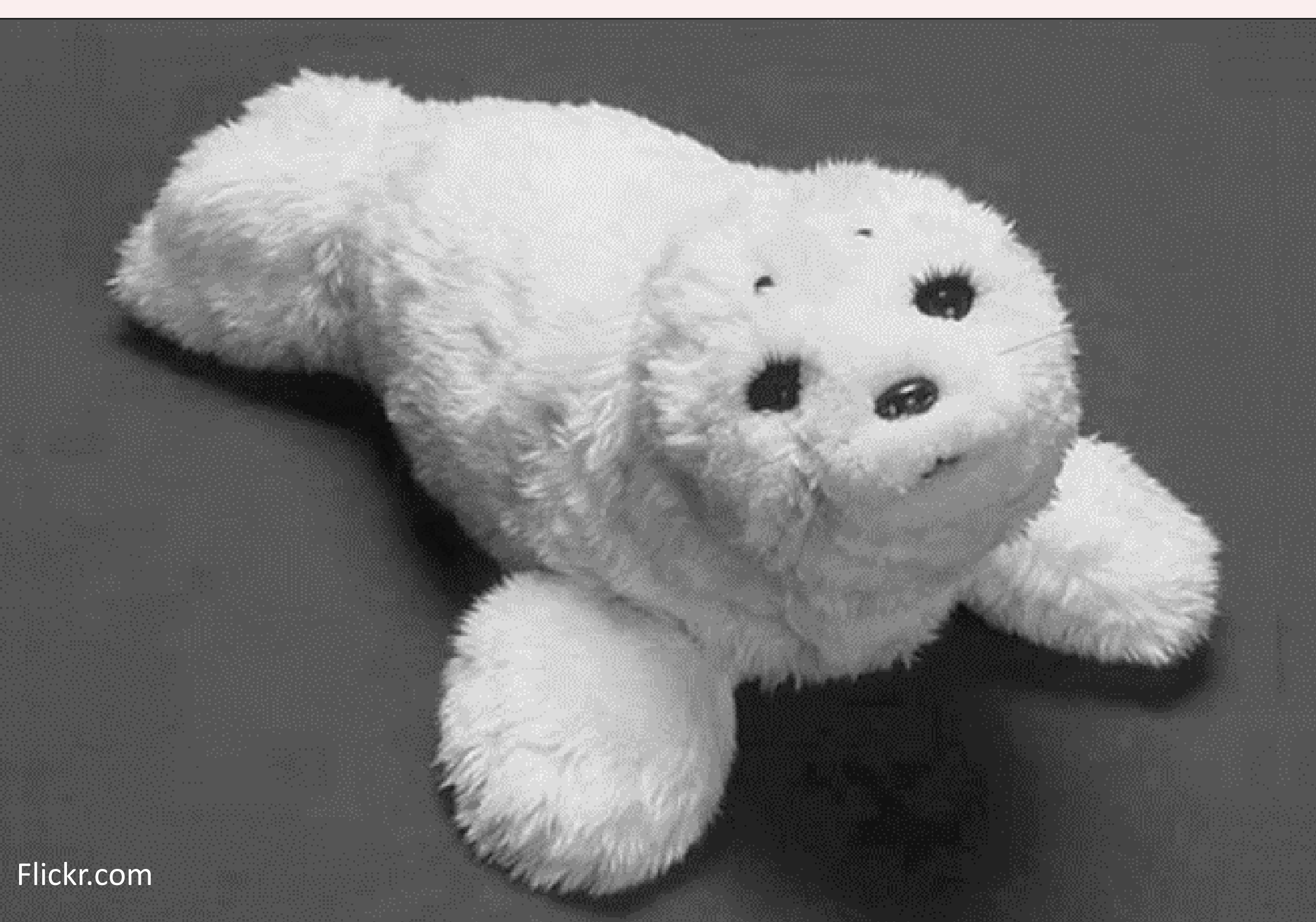
Objective

The aim of this study is to provide insight into

- (1) the relative effectiveness of AAI compared to IPR and,
- (2) the underlying beneficial factors that may contribute to the effectiveness of AAI and IPR

Design and analysis

Post-hoc analysis of a Bayesian Network
Meta-Analysis



Methods

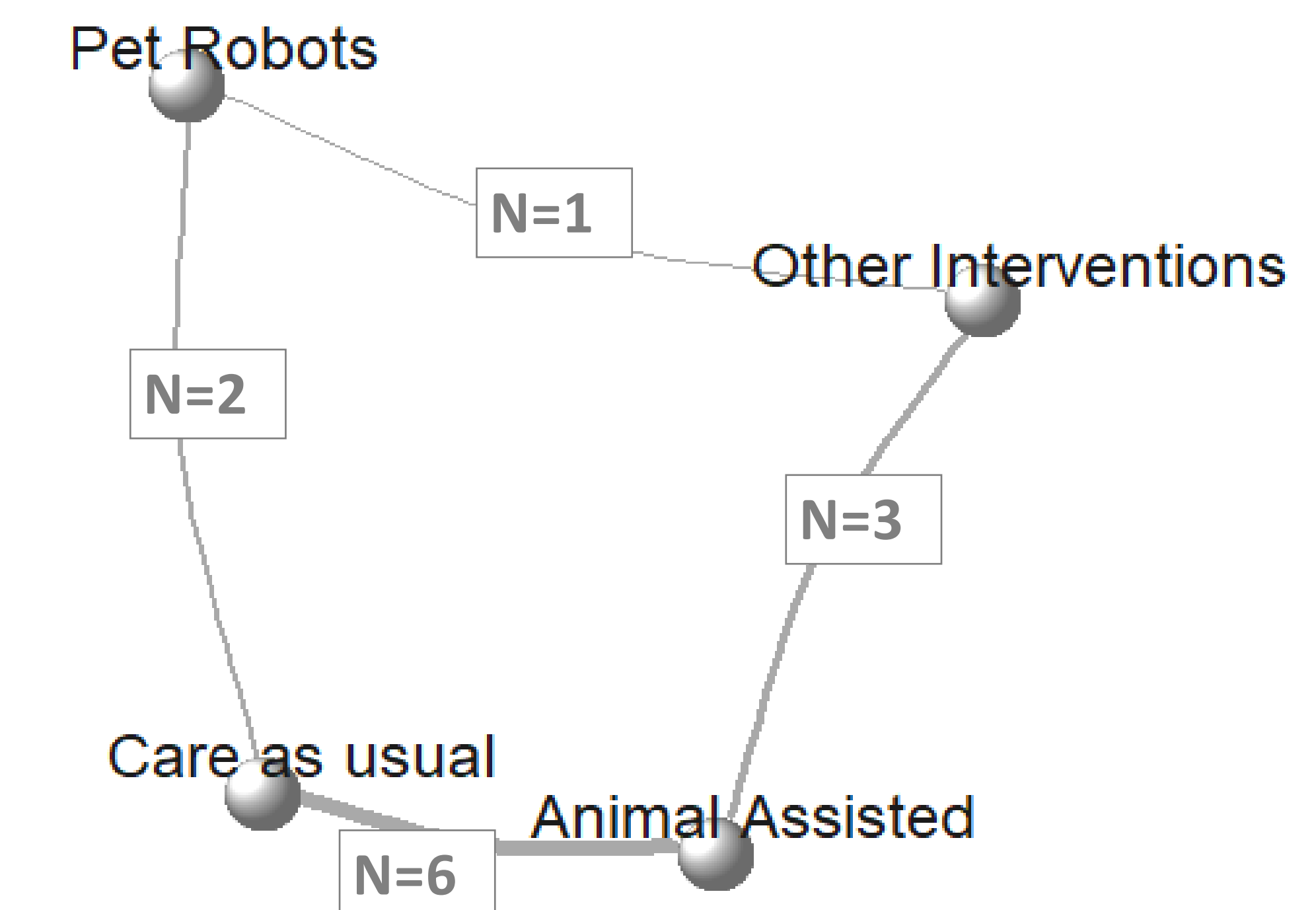
Search strategy, process of selection, and data collection

- Screening and selecting independently by two researchers; disagreements resolved through discussion
- Search strategy based on PICOS:
 - P**articipants: nursing home residents
 - I**nterventions (AAI or PR) with the intention to reduce depression
 - C**ontrol: care as usual, waiting list, and/or other intervention
 - O**utcome (primary): depression or depressive symptoms
 - S**tudy design: Randomized Controlled Trials

Results

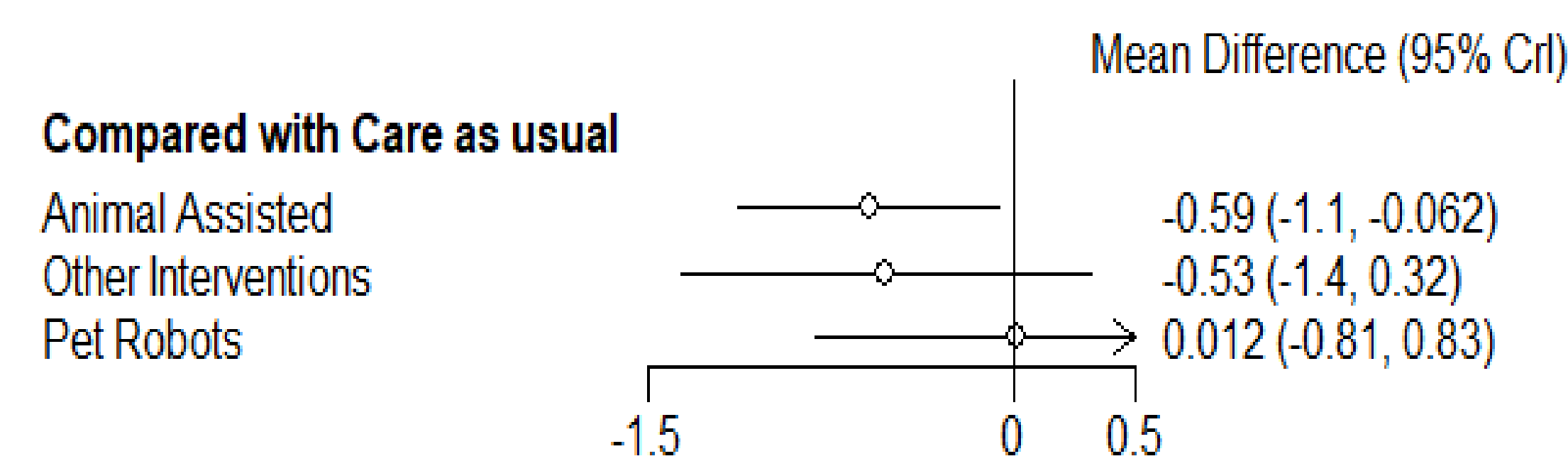
Relative effect sizes, and potential underlying beneficial factors

RESULTS OF OUR SEARCH PROCESS: NETWORK GRAPH (N=12)



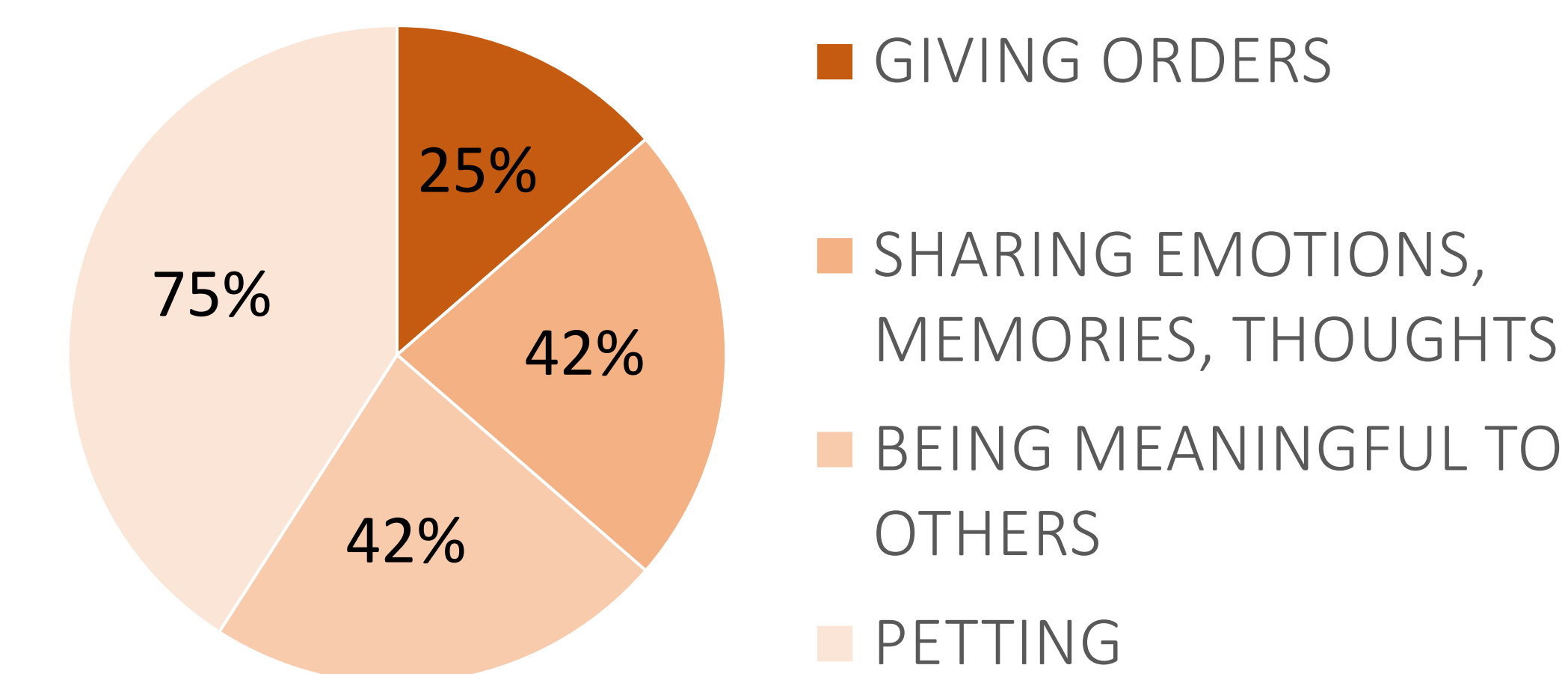
RELATIVE EFFECT SIZES

MEAN DIFFERENCE COMPARED WITH CARE AS USUAL



POTENTIAL UNDERLYING BENEFICIAL FACTORS

STUDIES (%) USING THE INVESTIGATED POTENTIAL UNDERLYING BENEFICIAL FACTORS



DEVIANCE INFORMATION CRITERIA (DIC)

	B (SD)	CrI	DIC*
NMA			22.76
Giving orders	-0.23 (0.54)	-1.30 to 0.85	22.67
Sharing	-0.19 (0.61)	-1.41 to 1.04	21.21
Meaning	-0.05 (0.51)	-1.06 to 0.98	22.89
Petting	-0.32 (0.51)	-1.33 to 0.70	19.90

*Differences of more than 10 DIC (compared to NMA), are considered important to rule out the model. No evidence that any of the controlled variable influenced our model.

Conclusions of the post-hoc analysis

- Post-hoc analysis imply that AAI may be preferred above IPR for reducing depression among nursing home residents;
- Because the limited number of reviewed studies, caution is needed when interpreting the results;
- To make IPR an appropriate solution in case of contra-indications for AAI, more insight in the underlying beneficial factors of AAI is needed.