

Project Summary 2017 – ISAE International in Denmark

Rats initially fear humans, which can decrease rat welfare. Rat tickling is a conspecific play technique that can improve human-animal interaction and rat welfare. However, researchers have insufficient guidance for using tickling which may prevent widespread adoption. Our objective was to provide a comprehensive overview of empirical tickling research to provide direction for future application and investigation.

We consulted the Preferred Reporting Guidelines for Systematic Review and Meta-Analysis (PRISMA) and Systematic Review Centre for Laboratory Animal Experimentation (SYRCLE) guidelines. Two independent investigators evaluated all articles about tickling identified from PubMed, Scopus, Web of Science, and PsychInfo. Inclusion criteria were publication of original, empirical data on rats using tickling in a peer-reviewed journal. Bias was assessed using the SYRCLE bias tool.

We identified 56 peer-reviewed experiments about rat tickling. Most experiments used the “Panksepp Tickling Method” for at least 4 days (46%, n=26). The most commonly found outcomes from tickling were increased positive vocalizations (n=16), approach behavior (n=9), and ease of handling (n=5), as well as decreased anxiety behavior (n=5). The most commonly identified moderators were individual differences (n=11) and housing type (n=8). Experiments minimized potential bias by using blinding during outcome assessment (50%, n=28) and addressing any missing outcome data (41%, n=23).

We concluded that tickling is a promising method of human-animal interaction that can be used to improve rat welfare. Tickled rats usually experience increased positive affect as well as decreased anxiety and fear. However, techniques to mitigate bias were poorly reported. Establishing tickling best practices is essential since tickling outcomes are moderated by several factors. Future research is needed to determine the effect of individual differences on rat welfare outcomes from tickling.

The Center for Animal Welfare Science facilitated the oral presentation of this work at the International Society of Applied Ethology International Conference in Aarhus, Denmark. While presenting my research, I gained valuable feedback from audience members and made connections with leading researchers in applied animal behavior.