

Social instability decreases alloparental care and quality of weaned offspring in a communally rearing rodent

Cita:

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Abstract

Social groups may experience permanent changes in adult composition. While field-based studies suggest this form of social instability may convey costs to the females, factors underlying these effects remain unclear. The aim of this study was to determine whether social instability experienced by pregnant females influences the ability of female group members other than the mother to buffer offspring experiencing socially stressful postnatal conditions. We also examined whether social instability influences communal care by females within groups. Groups of three adult degu, *Octodon degus*, females were assigned to one of two conditions: social stability (no changes in group composition) or social instability (changes in group composition during pregnancy). Upon birth of litters, offspring in the social instability groups were challenged with removal of their mother, removal of nonbreeding females or removal of all adult females for 2 h daily. We quantified social interactions among adult females and care given to the offspring. Upon weaning, the stress response to standard restraint and handling, and growth rate of offspring were quantified. Neither social instability nor postnatal social challenge influenced stress reactivity of offspring. Offspring in stable groups grew faster than offspring in unstable groups except when offspring experienced daily removal of their mother. Thus, the ability of mothers to buffer offspring growth seems contingent upon experiencing socially stable conditions, and in the absence of the mother, nonbreeding females were unable to buffer offspring. Nonbreeding females of socially unstable groups exhibited less alloparental care, and thus, offspring of unstable groups received less parental care overall. Our findings indicate that social instability in groups of degu negatively affects alloparental care and offspring quality.