

PHYSICAL IMPAIRMENT AND BEHAVIOR IN FREE-RANGING ADULT MACACA FUSCATA FEMALES

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Little is known about consequences of disability in nonhuman primates, yet physical impairments have been a reality over evolutionary time and individuals in such circumstances can reveal much about the behavioural flexibility and capabilities of a species. The *Macaca fuscata* population surrounding the Awajishima Monkey Center has experienced high rates of congenital limb malformation for at least 40 years, creating a unique opportunity to examine consequences of physical impairment in situ, in a relatively large sample of free-ranging adult monkeys. Here we present behavioural data on 11 disabled adult females and 11 nondisabled controls from 279 hours of randomly ordered 30-minute focal animal follows collected over nine months. Many behaviours were not significantly different among females: reliance on provisioned and wild foods, and terrestrial and arboreal use were unaffected by physical impairment. Mother-infant contact and nursing times were also similar among mothers, suggesting that limb malformations do not substantially impair the ability to raise offspring. However, there were some disability-related behavioural differences. Habitual bipedalism and other locomotor variants were used by some disabled animals. Grooming technique was also different according to disability. Disabled adult females showed lower frequency of hand use for removing louse eggs and compensated with increased direct use of the mouth or a two-arm pinch technique. Self-scratching against substrates was almost exclusively a disability-associated behaviour. Overall, behaviour of disabled females was surprisingly little affected, and in many instances they were able to compensate behaviourally to perform social and life-sustaining activities.

Keywords: Disability, Behavioral Ecology, Japanese macaque, Behavioral flexibility