

Authors reply to 'Scabies control: the forgotten role of personal hygiene', correspondence by Duncan Mara

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Authors reply to ‘Scabies control: the forgotten role of personal hygiene’, correspondence by Duncan Mara

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Mara criticises us for not investigating whether scabies transmission in UK care homes is caused by inadequate washing of residents, and bemoans absence of discussion of a supposed “water-washed transmission route” of scabies in the wider literature. The sole reference Mara gives for this claimed transmission route is *Drawers of Water: Domestic Water Use in East Africa*,¹ in which scabies is classified as one of the “water-washed diseases”: “infections that decrease as a result of increasing the volume of available water”. However, its authors offer no citations or biological mechanism to substantiate this categorisation of scabies. Though one table states an 80% reduction in scabies morbidity could be expected from water supply improvement, the authors themselves say this is “largely guesswork”.

In contrast, multiple studies indicate scabies prevalence is probably uninfluenced by personal washing,²⁻⁴ including the observation that some coastal people with rigorous hygiene and access to water nevertheless have high scabies levels.² In trials of the effect of bathing, intentionally infested individuals either had baths daily or none for up to two months. Parasite rate increases didn’t differ,³ unsurprising given egg-laying females burrow under the skin surface.² Vigorous use of a scrubbing brush sometimes removed them, but only when violent enough to draw blood³; more extreme than “NHS-clean” requirements Mara suggests could reduce transmission, or development of crusted scabies. This view may arise from a taxonomically blind presumption that what is virucidal or bactericidal will be effective against mites. In experiments hand-washing and alcohol hand rubs have not reduced *S.scabiei* number or viability.⁵

Mara criticises the term ‘outbreak’, suggesting in care homes “the disease may be endemic”, and what is pertinent is what causes escalation to crusted scabies. However, crusted cases were only diagnosed in a minority of outbreaks, and *S.scabiei* cannot live long off-host,² so could only be “endemic” in a home *within* residents or staff. Mara implies this is an

undetected, normal state of affairs. This seems unlikely as contact rates would result in multiple cases, including amongst staff.

Mara suggests using “ethically-placed hidden cameras” to determine how often residents are bathed. We cannot imagine how to predict in which homes to place cameras *prior* to outbreaks. More importantly care homes are homes, it is unlikely such invasive data collection would be approved by a UK ethics committee.

More scabies research is needed. Proposals should include biologically plausible justifications of mechanism, and methodology that respects participant autonomy.

References

1. White GF, Bradley DJ, U. WA. Drawers of Water: domestic water use in East Africa. Chicago: University of Chicago Press; 1972.
2. Walton SF, Currie BJ. Problems in diagnosing scabies, a global disease in human and animal populations. *Clin Microbiol Rev* 2007; **20**(2): 268-79.
3. Mellanby K. Scabies. Hampton: E.W. Classet Ltd.; 1972, p49.
4. Kouotou EA, Nansseu JRN, Sangare A, et al. Burden of human scabies in sub-Saharan African prisons: Evidence from the west region of Cameroon. *Australasian Journal of Dermatology* 2018; **59**(1): e6-e10.
5. Cinotti E, Perrot JL, Labeille B, et al. Inefficacy of alcohol-based hand rub on mites in a patient with hyperkeratotic scabies. *Clinical and Experimental Dermatology* 2015; **40**(2): 177-81.