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Authors

Lawson, David W
James, Susan
Ngadaya, Esther
et al.

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REPLY TO RIEGER AND WAGNER:

Context matters when studying purportedly harmful cultural practices

David W. Lawson^{a,1}, Susan James^b, Esther Ngadaya^c, Bernard Ngowi^c, Sayoki G. M. Mfinanga^c, and Monique Borgerhoff Mulder^{b,d}

Rieger and Wagner (1) present three lines of critique. First, Rieger and Wagner (1) argue that our (2) demonstration that polygyny predicts higher child weight-for-height z-scores (WHZ) in two out of three ethnic groups practicing polygyny should be disregarded because of inadequacies of this measure. We defend our use of WHZ because: (i) although no measure is perfect, many studies unequivocally confirm that WHZ is a useful indicator of acute malnutrition, highly predictive of child mortality (3); and (ii) regardless of construct validity, WHZ scores have guided the international development sector for decades, our primary audience in addressing claims that polygyny is universally harmful. We also emphasize that our interpretation that polygyny may, in certain contexts, serve female interests rests not only on differences in WHZ, but also on our demonstration that (male-headed) polygynous households are relatively food secure and wealthy compared with monogamous households.

Second, Rieger and Wagner (1) write that we demonstrate that child height-for-age z-scores (HAZ) are “systematically and negatively correlated with polygyny both at the individual and the village levels” (1), and that although our individual-level comparisons are statistically nonsignificant, this can be attributed to small sample size because their study of polygyny across 26 African nations revealed a statistically significant negative correlation at a similar magnitude (4). This critique fundamentally misses our central conclusion: context matters when studying purportedly harmful cultural practices. At the village level, the association between polygyny prevalence and child HAZ is accounted for by underlying contextual differences in ecological vulnerability (rainfall) and socioeconomic marginalization (education). At the individual level, our estimates are based

on a specific area of Tanzania, and so cannot be meaningfully contrasted with Wagner and Rieger’s (4) estimate based on Africa as a whole. Indeed, consistent with our analysis (2), Wagner and Rieger’s cross-national study identifies considerable heterogeneity, with confidence intervals crossing zero for 15 of 26 countries and a positive (statistically nonsignificant) association between polygyny and HAZ in Tanzania (ref. 4, p 17). Africa is a diverse continent and polygyny a diverse institution, encompassing variable norms of residence, resource sharing, and spousal recruitment (5). A true understanding of polygyny can only be gained by acknowledging this diversity and designing analyses that take context into account (2).

Third, Rieger and Wagner (1) suggest our analyses (2) are flawed because we don’t include interactions with child age. Reanalyzing our data selecting only children over 30 mo, Rieger and Wagner (1) report a negative association between polygyny and HAZ. However, our data are not suitable to test for age dependencies, which can only be confidently assessed via longitudinal analysis. Furthermore to achieve adequate sample size, Rieger and Wagner resort to (i) pooling data across ethnic groups, and so cannot rule out confounding with ethnicity, and (ii) crude comparisons neglecting wife rank (proxied by household head sex) that proved crucial in our original analysis. Notably, once adjusted for village differences, Rieger and Wagner’s (1) effect estimate also falls short of standard levels of statistical significance (i.e., $P < 0.05$). We also observe a double standard: Wagner and Rieger’s (4) own cross-national study of polygyny neglects age interactions. In studying “harmful cultural practices” it is vital that we apply equivalent standards of evidence independent of whether results meet or contradict conventional expectation.

^aDepartment of Population Health, London School of Hygiene and Tropical Medicine, London WC1E 7HT, United Kingdom; ^bSavannas Forever Tanzania, Arusha, Tanzania; ^cNational Institute for Medical Research, Muhimbili Medical Research Centre, Dar es Salaam, 11101, Tanzania; and ^dDepartment of Anthropology, University of California, Davis, CA 95616

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¹To whom correspondence should be addressed. Email: david.lawson@lshtm.ac.uk.

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