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Letter to the Editor

Response to 'Clinical relevance and validity of obesity risk prediction tools' by Redsell *et al.*

Madam

We are writing in response to the Letter to the Editor from Professor Sarah Redsell and colleagues[1] regarding our recent review article, 'Clinical relevance and validity of tools to predict infant, childhood and adulthood obesity: a systematic review'[2], published in *Public Health Nutrition*. We would like to sincerely thank Redsell and colleagues for their interest in our review.

We strongly commend the work published by Weng *et al.*[3] describing the initial development and internal validation of the Infant Risk of Obesity Checklist (IROC), using the UK Millennium Cohort Study (MCS). As noted in our discussion, the scope of our review was limited to original development and validation studies of overweight or obesity (overweight/obesity) prediction tools. A main focus of the review was to assess the methodological rigour of initial overweight/obesity prediction tool development and validation studies, rather than a combination of initial and follow-up development and validation studies, to ensure review consistency. Therefore, any follow-up validation studies that may have been performed were deemed outside the scope for inclusion in the review. A similar follow-up validation study[4] to that of Redsell *et al.*[5] was also excluded due to our review scope, while the original development and validation study by the same authors[6] was included within our review. We acknowledge the external validation and recalibration of the IROC algorithm within the Avon Longitudinal Study of Parents and Children (ALSPAC) cohort and the enhanced discriminative accuracy findings, as well as the net reclassification index method used to enable and improve clinical decision making. Additionally, in their letter, Redsell and colleagues[1] comment on our identification of only two studies performing external validation on a different cohort. For clarification, these two studies performed external validation as part of their initial development and validation phase and not as part of a subsequent study, thus making them eligible for inclusion within our review scope.

In reference to the comment from Redsell and colleagues[1] on our mention of 'little widespread clinical uptake' of an overweight/obesity prediction tool, we would like to clarify our definition of widespread clinical uptake. The scale of such uptake is, in our perspective, systems integration within the health-care sector, supported by evidence of frequent clinical use and associated outcomes. We believe the study published by Redsell *et al.*[7] in late 2017 is an extremely promising leap towards such uptake and integration, offering the first known attempt to assess the real-world feasibility of an overweight/obesity prediction tool (ProAsk) within underserved community settings. Unfortunately, due to the timing of our review completion (databases searched from inception until early September 2017), this feasibility study was not identified. If the timing of writing and submission were different, this study, along with reference to the follow-up validation study by Redsell *et al.*[5], would have been invaluable in supporting our review discussion and conclusions.

It is highly encouraging to read of the work of other groups in the field of childhood overweight/obesity prediction modelling and we commend the extensive contribution by Redsell and colleagues. We agree with Redsell and colleagues that parent-focused considerations and interventions are crucial to decreasing sensitivity and, thus, acceptability of an overweight/obesity prediction tool, especially within priority populations. This is especially relevant to Australia, as Aboriginal and Torres Strait Islander and Māori & Pacific Islander peoples exhibit a higher prevalence of overweight/obesity. We acknowledge Redsell and colleagues' support of our review conclusions and reiterate the need for methodologically robust overweight/obesity prediction tool development and validation, with the goal of eventual health system-wide integration of such a tool to maximise risk identification and the likelihood of overweight/obesity prevention.

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