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Food Waste Prevention in Public Catering: How Are Interventions Evaluated? Findings from a Rapid Review

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Abstract

A decade has passed since the UN resolved to halve per capita food waste by 2030 (United Nations General Assembly 2015). Despite these efforts, food waste remains a global issue, with consumers generating a majority of food waste (UNEP 2024). While households are responsible for the largest share of this waste, the food service sector also generate a significant amount (ibid.). Within this sector public catering is a space where many consumers may be reached, providing potential for early food waste interventions and reduced environmental impact (Feng et al. 2024). At the same time there is a lack of overview of intervention effectiveness and reproducibility for the public catering sector. We assessed food waste interventions in out-of-home settings to investigate what public catering establishments can do to reduce their food waste. To improve understanding of actual changes in food waste, we included studies with direct weighing methods. By applying a rapid review approach (meaning the systematic review method is streamlined for more timely results) we found 72 studies evaluating 140 interventions, where 60% reported a significant reduction in food waste. Recorded changes in food waste varied greatly across interventions, as did study design, making it difficult to claim which intervention is most effective. Most studies used convenience sampling when choosing participants or establishments and few randomized interventions between groups. The use of control groups for comparing intervention results was scarce, with only 6% of interventions using control groups. These are all factors that contribute to limiting the generalisation of the results. Most of the interventions were also evaluated for short time periods (51% in two weeks or less) and in few establishments (54% in one establishment), possibly leading to overstated effects of interventions, as neither seasonal variation of food waste nor variability in establishments is captured. Lastly, many of the interventions (68%) were assessed based solely on plate waste measurements. Possible implications are that if other food waste fractions increase during the intervention phase, e.g. serving waste, the total food waste level remains unknown. Future research should focus on efforts to improve reproducibility of interventions. This includes increased randomization, more robust and long-term food waste quantifications, and control groups.

Keywords: Out-of-home food waste, Food waste quantification, Direct weighing

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