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Using cashless catering system data to analyse nutritional intake during the school day: A feasibility study from Wales

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Extant literature implies that adolescence is a key stage of both physical and social growth whereby nutrition plays a significant role. Insight into what adolescents consume and their eating behaviours would enable improved targeted nutritional policy. However, frequently used dietary methodologies such as 24-hour dietary recall, keeping a food diary and completing a food frequency questionnaire are prone to measurement errors⁽¹⁾. A substantial proportion of an adolescents' daily nutritional intake is consumed during the school day. Collecting dietary intake data electronically at point-of-purchase in the school canteen has the potential to track the food and drink purchases of hundreds, if not thousands of adolescents longitudinally. Although cashless catering system data has the potential to provide immense insight into nutritional intake, minimal research has been done in this area and much remains unexplored^(2,3). This study aimed to ascertain what software is currently being used by secondary schools in Wales to pay for school food, manage point-of-sale and nutritionally analyse food. Additionally, the study explored how the various systems functioned, interacted alongside each other and the value of the datasets for monitoring nutritional intake during the school day.

A representative sample from all cashless catering system providers in Welsh secondary schools participated (n = 7) in a 20-minute interview over Microsoft Teams between January and March 2023. Audio recordings were transcribed within twenty-four hours then returned to the participant for their approval or amendment. The study protocol received approval from the Cardiff Metropolitan University School of Sport and Health Sciences ethics committee. Using QSR NVivo 12, transcripts were inductively thematically analysed, coded into first-order and second-order themes⁽⁴⁾.

A significant outcome of this research was that there are no universal definitions and numerous terminologies are used by providers; subsequently each of the three systems have now been ascribed definitions to assist with future work in this area. The thematic analysis resulted in five themes being identified: cashless catering (benefits, allergies, carbon footprint), reluctance (acquisition), COVID-19 (technical advancement, negative impact), integration (nutritional analysis, acquisition) and downloading data (issues, capabilities). Interviews with the providers offered detail regarding the comprehensive datasets that can be exported whilst acknowledging the limitations of nutritional analysis as an incorporated part of the process. Although cashless catering systems do not store nutritional information, integration with catering management software means dietary analysis is possible through a secondary calculation.

The results build on the limited existing evidence of how cashless catering systems can be used to track nutritional intake during the adolescent life stage. Now the prevalence and functionality of these systems is better understood, the next stage will be to explore how schools use them in reality. Case study co-creation with Welsh secondary schools will take place in 2023/2024.

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