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Using loyalty card transaction data to track seasonal laxative purchasing in the UK

Romana Burgess¹, Neo Poon¹, James Goulding², Helen Bould³, and Anya Skatova¹

¹Digital Footprints Lab, Population Health Sciences, Bristol Medical School, University of Bristol, United Kingdom

²N/LAB, Nottingham University Business School, Jubilee Campus, University of Nottingham

³Centre for Academic Mental Health, University of Bristol, Bristol, United Kingdom

Introduction & Background

Stimulant laxatives, commonly used for managing constipation, are known to be misused for weight management. Our study uses loyalty card transaction data from a major UK pharmacy retailer, examining seasonal laxative purchasing among frequent buyers between 2013 to 2014.

Objectives & Approach

Our analyses were carried out using product dosages, and refined to the top 1% of laxative buyers. Seasonal patterns in stimulant laxative purchasing were examined, with emphasis on two key periods: the New Year and the summer months. We hypothesised that purchases would be higher in January compared to December, and greater between May and August compared to September. We also investigated the effect of laxative type (stimulant versus non-stimulant), and validated against trends in general weight loss products over the same time periods. Additional comparisons were made with negative control groups, including pain relief, cold and flu, and hay fever medications.

Relevance to Digital Footprints

Our work uses loyalty card transaction data from a major UK retailer.

Results

Findings revealed clear seasonal fluctuations in stimulant laxative purchases, with higher purchases observed in the summer months compared to September, consistent with body image motivations during the warmer weather. Specifically, purchases were lower in May ($\beta = -0.03$, 95% CI: -0.04 to -0.01, $p < .001$), not significantly different in June ($\beta = 0.00$, 95% CI: -0.02 to 0.01), and significantly higher in July ($\beta = 0.02$, 95% CI: 0.01 to 0.03, $p < .01$) and August ($\beta = 0.03$, 95% CI: 0.01 to 0.04, $p < .001$), relative to September. However, we found no increase in stimulant laxative purchases in

January compared to December. Seasonal trends were more pronounced for stimulant laxatives than for non-stimulants. Seasonal peaks for weight management products were also observed in summer, but not in the New Year, and seasonal variations in other medication groups followed expected patterns (hay fever medication sales peaked in spring, cold and flu medication sales peaked in winter), confirming the validity of the observed trends.

Conclusions & Implications

Overall, seasonal patterns in stimulant laxative use differ from patterns of use for non-stimulant laxatives and other medications, and peak in the summer months. This suggests stimulant laxatives may be used for weight management purposes during the summer; potentially influenced by seasonal, body image-related factors. These findings highlight the value of novel transaction data in identifying potential misuse patterns.

Keywords

Laxatives, Loyalty Card, Consumer Behaviour, Weight Management, Self-Medication

