



Ultra-processed plant based alternative meat, fish & dairy foods- a mixed method study to evaluate consumer perception of nutrition content, sustainability and price

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Ultra-processed plant-based products (UPPBPs) are recognised as relatively new additions to the food market, usually obtained through food technology processes including preservatives, flavourings, aromas and dyes to mimic animal-based products⁽¹⁾. In the present study, UPPBPs were explored focusing on alternative meat, fish and dairy products, which are becoming increasingly relevant⁽²⁾. Previous studies have explored UPPBPs to an extent, with theories ranging from endorsing these products to addressing their potential downfalls. However, few studies explore perceptions of UPPBPs, especially with a target audience of young adults. The present study aimed to evaluate consumer perceptions of UPPBPs focusing on nutrition, sustainability, and price, in a sample of young adults attending LJMU.

A mixed methods approach was applied. Ethical approval was granted by the LJMU, School of Sport and Exercise Sciences Ethics committee (22/SPS_SLB/ NU/002). Data was collected through an anonymous online questionnaire and interviews, conducted through Microsoft Teams (version 4.2.4.0). Participants for the questionnaire (n = 55) were attained through LJMU email, and interview participants (n = 3) from further request following survey processes. All participants were students attending LJMU. Quantitative data were analysed using Spearman's Correlation (SPSS V28, New York). Qualitative data was interpreted using a thematic analysis, Braun and Clarke six-step approach⁽³⁾.

From a macro and micronutrient standpoint, UPPBPs were shown to be inferior compared to animal products. Regularity of consumption was significantly associated with perceptions of nutritional content ($r = 0.47$, $p = 0.001$), and sustainability ($r = 0.34$, $p = 0.01$). Nutritionally, 62% viewed UPPBPs as inferior to animal-based products and 78% perceived UPPBPs as more expensive. Quantitative themes of 1) General attitude towards plant-based products; 2) Nutritional adequacy of plant-based alternatives; 3) Unhealthful observations; 4) Healthful observations; 5) Change of nutritional perception were identified. The palatability of UPPBPs was a reoccurring idea when referring to food choice 'so, I know it's not healthy, I just prefer the taste' (participant 1, moderate consumer). There was a persistent sub-theme of nutrient deficiency 'You probably have to eat twice or three times the amount to get the same nutrients' (participant 3, regular consumer).

To conclude, perception regarding food products is recognised as subjective to the individual, however the findings of the present study can be used as an insight to opinions surrounding UPPBPs within the given target audience. Future research should focus on repeated measures over multiple time points, which would allow greater statistical strength of the findings. Further research is now needed to gain more insight on nutrition and sustainability perceptions of UPPBPs using a larger sample size. Furthermore, future studies should also focus on the link between the socio-economic status of the consumer and their perception of cost.

References

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