

A cross-sectional study investigating the nutritional knowledge/attitudes and carbohydrate intake for peak performance among recreational runners aged 20 – 50 years old prior to participation in parkrun.



Introduction

Existing research hasn't investigated the pre-event carbohydrate consumption of Parkrun participants. Additionally, no research has been carried out investigating the nutritional knowledge of these participants.

Performance recommendations state that athletes engaging in 5 km races should consume 1 – 4 grams of carbohydrates per kg of body weight (g/kg/bw) 1 to 6 hours before their event begins (Stellingwerff, Boit & Res, 2007). For athletes performing early in the morning, it is recommended to wake up 3-4 hours before their event to consume a carbohydrate-rich meal (Stellingwerff, Bovim & Whitfield, 2019). This will optimise pre-performance liver glycogen levels, which is critical for high-intensity efforts (Jeukendrup & Gleeson, 2019).

By investigating participant carbohydrate consumption, timing and awareness, the research will offer insights into the strategies employed during preparation for peak performance in 5km running events. The insights will present data that can help inform nutritional recommendations for recreational athletes for performance optimisation.

This study aims to investigate the knowledge and nutritional attitudes of recreational athletes participating in parkrun events, emphasising pre-event carbohydrate consumption for peak performance.

The primary objectives are:

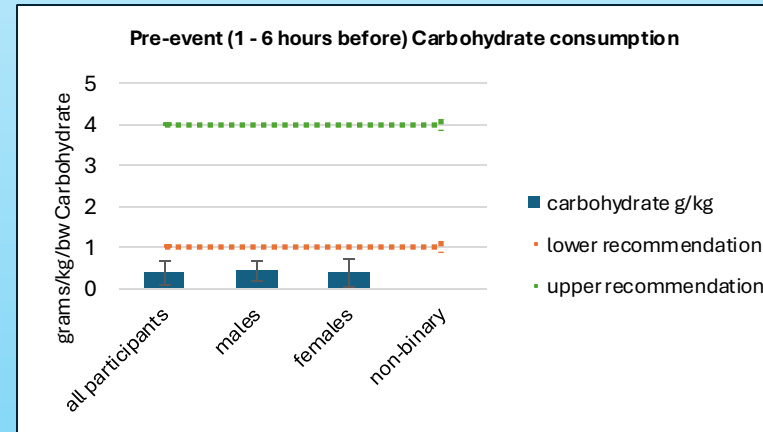
- Quantify participants' pre-event carbohydrate consumption.
- Compare the participants' pre-event carbohydrate intake and timing against current recommendations.
- Evaluate the level of nutritional knowledge among the participants concerning the contribution of carbohydrates towards enhancing athletic performance.

Methods

The study used a mixed methods approach. Data was collected from 43 recreational runners using an online questionnaire. Demographic information was collected. Participants (n = 33) completed the pre-parkrun dietary recall along with intake timings. Participants (n = 42) answered knowledge-based questions about carbohydrates and their relationship with sports performance.

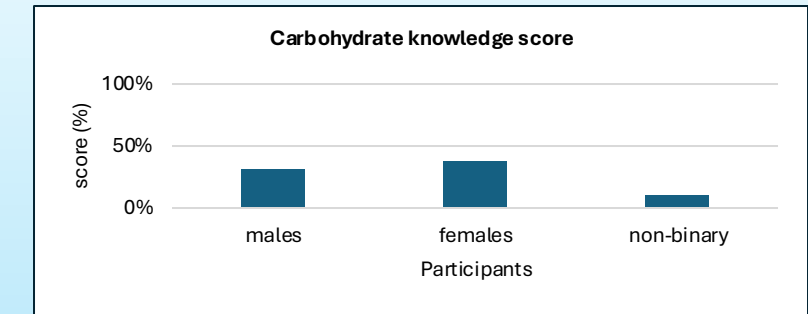
Participants	Pre-event carbohydrate intake	Carbohydrate knowledge
Total participants (n)	33	44
Male participants (n)	15	20
Female participants (n)	16	22
Non-binary participants (n)	2	2
Age (years)	Male = 36 ± 7 Female = 41 ± 7 Non-binary = 37 ± 2	Male = 38 ± 8 Female = 39 ± 8 Non-binary = 37 ± 2
Weight (kg)	Male = 77.9 ± 11.4 Female = 64.6 ± 10.95 Non-binary = 83 ± 10	Male = 78.0 ± 13.1 Female = 64.8 ± 12.0 Non-binary = 83 ± 10.0

Results



The participants reported a statistically significant lower level of carbohydrate intake per kg of body weight ($M = 0.38$ grams, $SD = 0.31$) than the recommended 1 – 4 g/kg/bw of carbohydrate, $t(32) = -11.5$, $p = .001$.

A Kruskal-Wallis was performed on the intake of carbohydrate intake per kg of body weight across the three genders (1 = male, 2 = female & 3 = non-binary) of the participants. There was no statistically significant difference, $H(2, n = 33) = 3.81$, $p = .149$.



A Kruskal-Wallis was performed on the carbohydrate knowledge scores across the three genders (1 = male, 2 = female & 3 = non-binary) of the participants. The differences between the score totals 1 = 21.7%, 2 = 24.7% and 3 = 6.8% were not statistically significant, $H(2, n = 44) = 3.76$, $p = .152$.

A non-significant, small, negative relationship exists between participants' pre-event carbohydrate (g) intake per kg of body weight and their carbohydrate knowledge score ($r = -.03$, $n = 33$, $p = .87$).

Two major themes concerning pre-event dietary intake were identified;

- Limiting pre-event dietary intake to avoid gastrointestinal distress during running.
- Providing enough energy to perform well.

Participants stated they typically do not alter their fuelling when aiming for peak performance.

Runner's World (online & print) was the most commonly used source of sports nutrition information.

Conclusion

This study demonstrates that the recreational runners taking part in this study do not meet the pre-event carbohydrate recommendations for peak performance in 5km running and therefore likely do not maximise liver glycogen stores. Their pre-event dietary intake relates to feeling comfortable and avoiding gastrointestinal symptoms when running. The participants had low knowledge of how carbohydrates are utilised in the body for performance. Further research is required in this area of study with larger cohorts. Future investigations may include exploring participants' motivations for peak performance and the impact of 1-4g/kg/bw of carbohydrate prior to parkrun on 5km times vs average participant intakes if below recommendations.

References

Jeukendrup, A. E. and Gleeson, M. (2019) *Sport nutrition*. Third edition. edn. Champaign, IL: Human Kinetics.

Stellingwerff, T., Boit, M. K. and Res, P. T. (2007) 'Nutritional strategies to optimize training and racing in middle-distance athletes', *Journal of Sports Sciences*, 25(sup1), pp. S17-S28.

Stellingwerff, T., Bovim, I. M. and Whitfield, J. (2019) 'Contemporary Nutrition Interventions to Optimize Performance in Middle-Distance Runners', *International Journal of Sport Nutrition and Exercise Metabolism*, 29(2), pp. 106-116.

