

Development of the Ireland and UK Athlete Dietary Index (IreUK-ADI) Through a Qualitative Consensus Approach

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Introduction

- Diet quality is increasingly recognised as important for athlete health, recovery, and performance¹. Diet quality indices (DQIs) provide a rapid and practical method of assessing diet quality based on adherence to dietary recommendations; however, their validity is population- and context-specific.
- To address the specific dietary demands of athletes, Capling et al. developed the Athlete Diet Index (ADI), an athlete-specific electronic diet quality screening tool². Among elite Australian athletes, the ADI has demonstrated good reliability and moderate relative validity; however, previous validation of the modified ADI (mADI) in Irish athletes suggested that further cultural refinement may be warranted to improve applicability within Irish and UK sport settings^{3,4}.
- This study aimed to adapt the mADI for use in Irish and UK athletes by: 1) exploring registered sports nutrition professionals' perspectives on the content relevance and usability of the existing mADI; and 2) refining the mADI through semi-structured interviews and an e-Delphi consensus process to align with current guidelines.

Methods

- A two-phase qualitative consensus design was used to adapt the modified Athlete Diet Index (mADI) for Irish and UK sport settings. Registered sports nutritionists and dietitians working with athletes based in the Republic of Ireland and the UK were recruited through Sport Ireland Institute, UK Sports Institute, and the Sports and Exercise Nutrition Groups within INDI and the BDA.
- Phase 1: Semi-structured interviews:** Twenty practitioners (Ireland n=13; UK n=7) participated in semi-structured interviews conducted via Microsoft Teams. Interviews were audio-recorded, transcribed, and analysed using reflexive thematic analysis following Braun and Clarke's six-phase framework. Themes identified informed proposed adaptations to the mADI.
- Phase 2: e-Delphi process:** Proposed adaptations were evaluated through a two-round e-Delphi process conducted in Qualtrics, with fifteen participants completing both rounds. Consensus was defined a priori as ≥80% agreement (ratings of 4 "agree" or 5 "strongly agree" on a 5-point Likert scale). Items not meeting consensus, alongside free-text feedback, informed revisions between rounds.

Results

Phase 1 (Semi-structured interviews)

- Reflexive thematic analysis identified four themes and associated sub-themes that informed content adaptations and future features of the mADI (Figure 1).
- Contextual relevance**
 - Athlete-specific:* The mADI was perceived as athlete-specific. However, concerns were raised regarding suitability for youth, para, vegetarian, and vegan athletes, alongside limited sport-specificity for differing fuelling practices such as carbohydrate loading in endurance athletes.
 - Culturally-specific:* Further cultural adaptation was considered necessary to align the tool with Irish and UK dietary guidelines, food terminology, portion sizes, commonly consumed foods, and culturally relevant sports and organisations.

Design

- Mode of access:* Digital accessibility on mobile and desktop platforms was valued by participants.
- Visual aids:* Including additional intuitive images beside written text and using standardised reference objects as portion size estimation aids rather than "unstandardised measures such as jugs or palm size" was suggested by participants to reduce variability in portion size estimation.
- Language clarity:* Clear language, representative recall periods, examples of commonly forgotten foods, and appropriate response categories were considered important to improve comprehension and responsiveness of the tool.
- Ease of data entry:* Minimal free-text and tick-box formats were valued; however, excessive clicking and questions spanning multiple pages on mobile devices were perceived to potentially cause frustration and reduce engagement.
- Question sequencing:* A clear and logical question order was perceived to improve clarity, relevance, engagement and dietary recall.
- Survey Length:* Participants emphasised the need to minimise survey burden through branching logic, streamlined questions, and completion times under 15–20 minutes.

Validity and Reliability

- Appropriate validation and pilot testing:* Participants noted that, while all self-reported dietary assessment methods involve measurement error, context-specific validation would allow practitioners to "stand over the data".

Functionality

- Automated analysis and flagging:* While some preferred to analyse raw data independently, others considered automated analysis and flagging desirable to screen groups, identify individuals requiring further support, and guide group-level nutrition education.

- Tracking over time:* Participants emphasised the importance of the system supporting repeated measures of dietary data over time, enabling practitioners to monitor and evaluate interventions.
- Integration with athlete management systems:* Integration with existing athlete management systems was considered desirable to support shared access to dietary data and reduce duplication of data entry.
- Data security:* Compliance with data protection regulations was also identified as an important consideration for implementation.

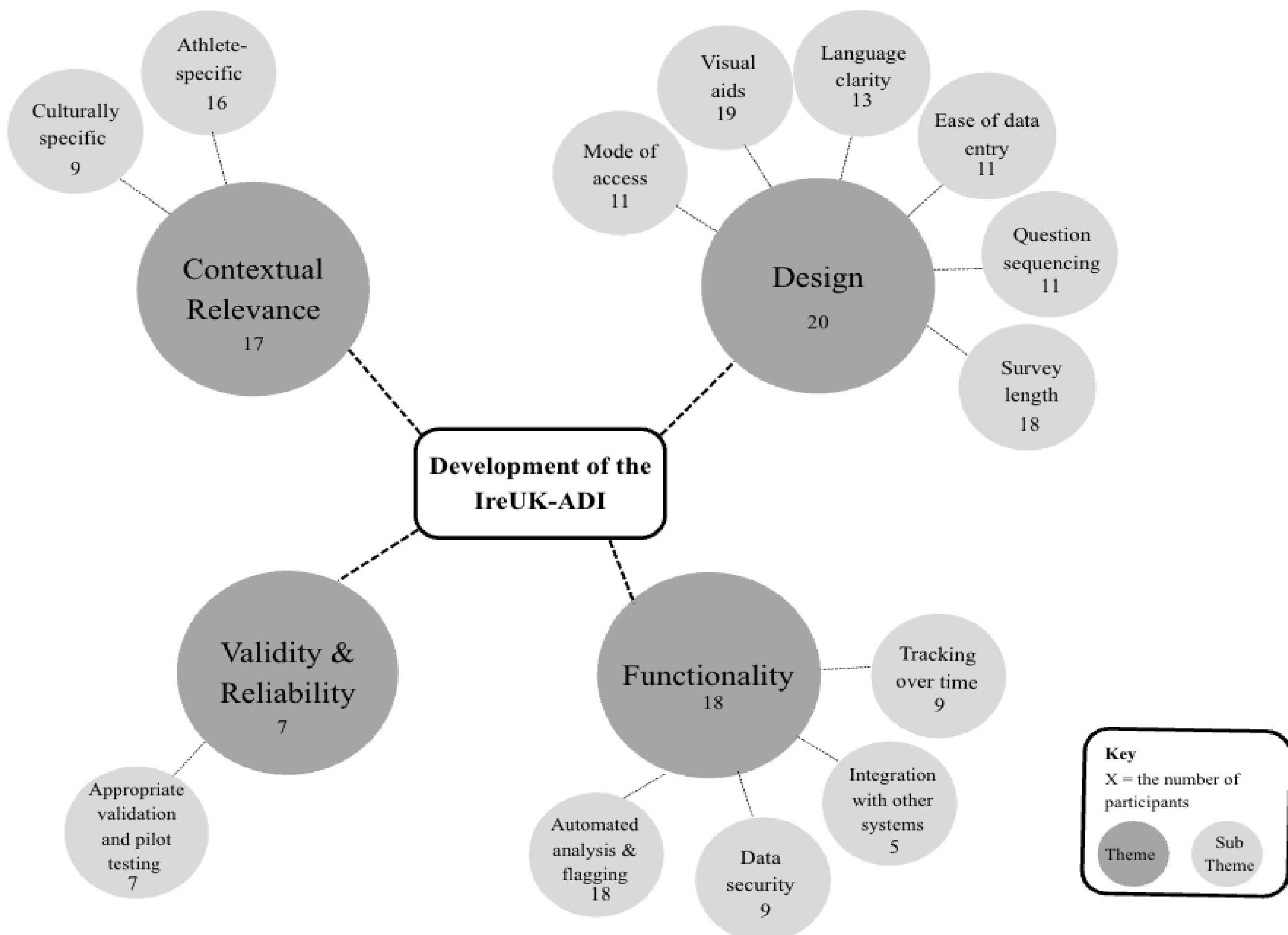


Figure 1. Thematic map of features informing the development of the IreUK-ADI.

Phase 2 (e-Delphi rounds)

- Proposed adaptations evaluated through the e-Delphi process included cultural specificity, question sequencing, language clarity, visual aids, ease of data entry, survey length, athlete-specificity, and sensitive response options.
- Adaptations achieving the predefined ≥80% consensus threshold (Round 1: 98/100; Round 2: 17/22) were incorporated into the Irish and UK Athlete Diet Index (IreUK-ADI).

Conclusion

- This study adapted the mADI for use within Irish and UK sporting contexts through stakeholder-informed consensus. Semi-structured interviews and a two-round e-Delphi process informed revisions intended to improve its perceived usability, content relevance, and alignment with the Irish and UK FBDG. The IreUK-ADI comprises 98 items across three sections: Part A) Personal information and health screening, collecting demographic, sporting, medical, injury, dietary intolerance/allergy, and lifestyle information; Part B) Core athlete nutrition, assessing habitual dietary intake during a typical training week, including food group consumption, alcohol intake, and dietary practices; and Part C) Performance nutrition, evaluating training load, fuelling and hydration practices, and the use of sports foods, dietary supplements, and ergogenic aids.
- The resulting IreUK-ADI may provide a practical, culturally relevant, and athlete-specific diet quality screening tool for Irish and UK sport settings.
- Further research is required to evaluate the feasibility and functionality of the IreUK-ADI in practice, refine the scoring matrix and feedback system, and establish its validity, reliability, and responsiveness against established dietary assessment methods.

References

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