

Pedi R-MAPP

The development of a nutritional awareness tool for use as part of a nutrition focused consultation with children



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The global health crisis has led to rapid adoption and implementation of technology-enabled care services (TECS),^{1,2} significantly changing the way health professionals deliver care. An in-person nutrition-focused assessment of children typically includes a review of: (i) anthropometry; (ii) biochemistry; (iii) clinical condition; (iv) a review of usual food intake and the effect of nutritional interventions; (v) goal setting with caregivers, and a plan for follow-up as appropriate.³ Prior to the pandemic, it was reported that 45% of dietitians had no formal training in conducting remote counselling,⁴ and 24% reported that inability to perform growth monitoring and nutrition assessment was a barrier to using TECS,⁵ and less experienced dietitians reported lower satisfaction with performing a TECS assessment.⁴ Recommendations from the literature suggested developing tools to support remote performance of nutrition-specific assessments could improve the confidence and support of healthcare professionals (HCPs).^{4,6}

Why was Pedi R-MAPP developed?

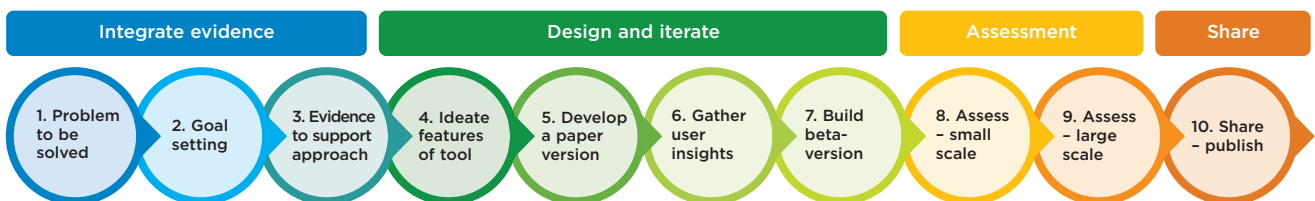
In March 2020, to help support rapid upskilling of dietitians to complete TECs assessments, the British Dietetic Association (BDA) Paediatric Specialist Group developed guidance on how to complete remote dietetic consultations for HCPs working in paediatric primary healthcare.¹ However, it became clear from the number of surveys completed a digital tool may be easier to use making it more accessible for dietitians to use in a clinical setting.² As such, the goal of this research project was to translate the adult tool, R-MAPP,³ into a version suitable for children and young people. The focus was to provide a structured approach to completing a nutrition

focused assessment as part of a face-to-face outpatient appointment or as part of a TECS consultation, rather than develop a new malnutrition risk or screening tool.⁴

How was Pedi R-MAPP developed?

The Pedi R-MAPP tool has been created over the last 30 months using the Integrate, Design, Assess, and Share (IDEAS) framework as a scientific basis to guide the development of the tool.⁵ The framework has ten steps which fall into 4 broad groups of: i) integrate ideas from HCPs & evidence; ii) design iteratively and rapidly following HCP feedback; iii) assess rigorously; and iv) share (**Figure 1**).

Figure 1: IDEAS framework for the development of the Pedi R-MAPP



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After the first testing period, the level of agreement with summary advice by specialist paediatric dietitian was an 85.9% (n=640) agreement, with 14.1% (n=105) disagreement (**Table 1**). A thematic analysis was completed on the annotated reasons for disagreement. There were 105 comments grouped into four over-arching themes: i) receiving nutritional support and/or restricted diet 16.2% (n=17/105); ii) child has chronic condition so requires ongoing review 20.0% (n=21/105); iii) growth/recent changes in growth; condition specific growth chart 6.7% (n=7/105); and iv) different review time advised by dietitian (within which there were two sub-themes of less urgent review and more urgent review) 57.1% (n=60).

Following the iterative changes and re-testing, the level of agreement with the summary advice improve from 86% (n=640/745) to 98% (n=730/745) post-iteration (p<0.0001). The cases where there was ongoing disagreement (n=15) with the summary advice was around the use of condition-specific growth charts, i.e. trisomy-21 and an alternative review time period favoured. A total of sixteen iterative changes were made to the tool over the development and testing period (18 months). As part of wide-scale testing, paediatric dietitians reported Pedi R-MAPP was user-friendly in an outpatient setting, taking an average of 1-2 minutes to complete per consultation.

Share

Step 10: Publish & launch tool

Pedi R-MAPP is a freely accessible digital tool for use by dietitians and HCPs to support a nutrition-focused consultation, either completed virtually or in-person.

Discussion

The BDA uses a model and process for integration of professional knowledge using a step wise process to develop appropriate nutrition interventions.⁹ The Pedi R-MAPP tool draws on this and other models to provide HCPs with a structured framework to

complete a nutrition-focused assessment with summary advice around recommended frequency of review with; urgent (face to face review), red (1-2 weeks), amber (1-3 months), purple (3-6 months) and green (discharge).¹⁰ Pedi R-MAPP was developed using the IDEAS framework, which provides a step-by-step process to guide the development and evaluation of digital interventions using four-broad concepts including an evidence-based approach, with design thinking, iterative evaluation, and dissemination.⁵ Testing of the tool was undertaken by specialist paediatric dietitians involving children within ten broad groups of acute and chronic clinical conditions. The results of this study suggest specialist dietitians agree with the summary advice recommendations of the Pedi R-MAPP tool. Dietitians also felt the tool was quick and easy to use in a clinical setting.

The Pedi R-MAPP tool has a number of limitations including testing by primary care dietitians. Although there were high levels of agreement with the summary advice by the specialist paediatric dietitians, this may have been influenced by local standards of nutrition practice and as such may not represent the opinion of a wider group of HCPs. However, as the results from all phases of the development would suggest, there was a high level of agreement from those who have tested the tool. But further testing in the future will be required. A training package and information is available to support the use and implementation of Pedi R-MAPP into clinical practice.

Conclusion

The Pedi-R-MAPP tool has been developed using a step-by-step process of design-thinking to lead the development, iteration, evaluation, and dissemination of digital interventions. Pedi R-MAPP tool can act as an aide memoire to guide dietitians and HCPs completing a nutrition focused assessment, with the goal of reducing variation in practice, providing guidance as to the frequency of review including urgent in person medical review.

Table 1: Paediatric dietetic agreement with summary advice in Pedi R-MAPP tool

Summary advice	Proportion of children in each summary advice group	Paediatric Dietetic level of agreement with the summary advice
Green (discharge)	30.2% (n=225/745)	81.8% (n=184/225)
Amber (review 1-2 months)	41.5% (n=309/745)	87.1% (n=269/309)
Red (review 1-2 weeks)	2.4% (n=18/745)	83.3% (n=15/18)
Purple (review 3-6 months)	12.5% (n=93/745)	94.6% (n=88/93)

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