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Original Article

Translating Cardiovascular Clinical Practice Guidelines on Nutrition Therapy: Validation of the Portfolio Diet Toolkit for Healthcare Providers

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ABSTRACT

Background: Cardiovascular disease (CVD) remains a leading cause of death in Canada. Although the Portfolio Diet, a dietary pattern of cholesterol-lowering foods, is supported by CVD clinical practice guidelines, its uptake in clinical practice remains limited. This study assessed the content and face validity of a healthcare provider (HCP)-facing toolkit (infographic and video), designed to support implementation of the Portfolio Diet.

Methods: HCPs were recruited for a 2-round evaluation. They assessed the toolkit using a questionnaire. Content validity of the infographic was assessed using a 4-point Likert scale (1 = irrelevant to 4 = extremely relevant) and face validity of the infographic and video was assessed using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Content-validity indices (CVIs) and face-validity indices (FVIs) were calculated, with $\geq$ 0.70/1.0 indicating validity.

RÉSUMÉ

Contexte : Les maladies cardiovasculaires (MCV) restent l'une des principales causes de décès au Canada. Bien que le régime Portfolio, qui consiste à consommer des aliments hypocholestérolémiants, soit appuyé par les lignes directrices de pratique clinique sur les MCV, son adoption dans la pratique clinique reste limitée. Cette étude visait à évaluer le contenu et la valeur apparente d'une trousse à outils (contenu infographique et vidéo) destinée aux professionnels de la santé, conçue pour favoriser la mise en œuvre du régime Portfolio.

Méthodologie : Des professionnels de la santé ont été recrutés pour une évaluation en deux phases. Ils ont évalué la trousse à outils à l'aide d'un questionnaire. La valeur du contenu infographique a été évaluée à l'aide d'une échelle de Likert à 4 points (1 = non pertinente à 4 = extrêmement pertinente); la valeur apparente du contenu infographique et vidéo a été évaluée à l'aide d'une échelle de Likert à

Cardiovascular disease (CVD) remains a leading cause of death and hospitalization in Canada, affecting approximately 1 in 12 Canadian adults.[1] As the population ages, the burden of CVD is expected to increase, leading to higher healthcare costs and resource utilization.[2] Along with smoking, alcohol use, and low physical activity levels, dietary patterns remain the top modifiable behavioural risk factor for CVD.[3] Clinical practice guidelines internationally recommend diet and lifestyle interventions as foundational strategies for CVD prevention and management.[4]

Keywords: Content validity; face validity; knowledge mobilization; dietary pattern; Portfolio Diet; plant-based; nutrition therapy

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Qualitative feedback informed revisions made between rounds.
Results: In round 1 (N = 21), all but one section of the infographic met the CVI threshold, and all FVI values exceeded 0.70. Feedback highlighted the need for explicit food examples, an improved layout, and reduced use of jargon. In round 2 (N = 28), CVI (0.86-1.0) and FVI (0.79-1.0, infographic; 0.89-1.0, video) improved. HCPs reported that the toolkit increased their knowledge, their confidence in recommending the Portfolio Diet and PortfolioDiet.app to patients, and their confidence in recommending the toolkit to other clinicians ($FVI_{infographic}$ = 0.89 to 1.0; FVI_{video} = 0.89).
Conclusions: The toolkit demonstrated strong content and face validity. Repeated assessments and refinement guided by end-user feedback enhanced the toolkit, supporting HCPs in implementing the Portfolio Diet for CVD prevention and management in practice.
Clinical Trial Registration: NCT05915455.

5 points (1 = pas du tout d'accord à 5 = tout à fait d'accord). Les indices de la valeur du contenu (IVC) et les indices de la valeur apparente (IVA) ont été calculés; la valeur est définie par des indices ≥ 0,70/1,0. Les commentaires qualitatifs recueillis entre chaque cycle ont servi à modifier le cycle suivant.
Résultats : Lors du cycle 1 (N = 21), toutes les sections infographiques, sauf une, ont franchi le seuil de l'IVC, tandis que toutes les valeurs de l'IVA étaient supérieures à 0,70. Les commentaires ont mis en évidence la nécessité de fournir des exemples explicites d'aliments, d'améliorer la mise en page et d'employer moins de jargon médical. Pendant le cycle 2 (N = 28), l'IVC (0,86 à 1,0) et l'IVA (0,79 à 1,0 pour le contenu infographique; 0,89 à 1,0 pour le contenu vidéo) se sont améliorés. Les professionnels de la santé ont trouvé que la trousse à outils leur permettait d'accroître leurs connaissances et de recommander avec plus d'assurance le régime Portfolio et l'application PortfolioDiet à leurs patients, et les incitait à recommander la boîte à outils à d'autres cliniciens ($IVA_{infographie}$ = 0,89 à 1,0; $IVA_{vidéo}$ = 0,89).
Conclusions : L'étude a montré la forte valeur du contenu de la boîte à outils et sa forte valeur apparente. Des évaluations en série et les commentaires recueillis auprès des utilisateurs finaux ont permis de perfectionner la boîte à outils, ce qui a mieux incité les professionnels de la santé à mettre en œuvre le régime Portfolio pour la prévention et la prise en charge des MCV dans la pratique.

One such evidence-based dietary pattern is the Portfolio Diet, which is internationally recognized in clinical practice guidelines for CVD risk reduction.[4-7]The Portfolio Diet is a plant-based dietary pattern that consists of 5 cholesterol-lowering food pillars (nuts and seeds, plant protein, viscous fibre, plant sterols, and monounsaturated fatty acids), each of which carries a health claim for cholesterol and/or coronary heart disease risk reduction in Canada, the US, and/or Europe.[8-17]

As the first point of contact, primary care is well suited to support patients in adopting a healthy diet. However, healthcare providers (HCPs) face barriers to delivering evidence-based nutrition advice, including time constraints, limited support, and insufficient resources.[18,19] Translating scientific evidence into practice requires effective knowledge-translation tools that have been evaluated to be accessible and context-specific, to support HCP knowledge and confidence.[20,21] To facilitate the adoption of the Portfolio Diet in practice, we developed an HCP-facing Portfolio Diet toolkit, which includes an HCP-facing infographic and a 4-minute video walkthrough (Fig. 1). The HCP Portfolio Diet toolkit is designed to communicate key information on the Portfolio Diet to HCPs in primary care who are most often involved in dietary counselling, including family physicians, registered dietitians, nurses, and pharmacists. The toolkit highlights key findings from randomized controlled trials, the diet's 5 pillars, its clinical impact on CVD risk factors, and its alignment with national and international guidelines. The toolkit also introduces our patient-facing translational tools, including our Portfolio Diet infographic and PortfolioDiet.app, both of which are endorsed by the Canadian Cardiovascular Society.[22]

The validation of the toolkit through active input from HCPs is essential to ensure its effectiveness and appropriateness in a clinical setting. We therefore conducted a content and face validation of our HCP-facing toolkit and assessed whether it increases HCP knowledge and potential use in practice.

Methods

Design

This content and face validation study incorporates quantitative and qualitative data with repeated assessment and refinement to assess the HCP-facing Portfolio Diet toolkit. The study protocol was reviewed and approved by the University of Toronto Research Ethics Board. The study protocol was registered on ClinicalTrial.gov (NCT05915455).

In round 1 of the study, a sample of HCPs, including physicians (generalists and specialists), registered dietitians, nurses, pharmacists, and naturopathic doctors, were recruited through clinic outreach and professional networks, primarily in the Greater Toronto Area. Participants also were encouraged to forward the opportunity to colleagues within their networks. According to Lynn's method, a panel of 10 experts is sufficient to establish content validity.[23] However, we intentionally recruited a larger and more diverse group (≥ 15) to ensure representation across disciplines. HCPs provided electronic consent to participate via the Research Electronic Data Capture (REDCap) platform, a secure Web application for managing online data collection, hosted by the University of Toronto.[24,25] Participants were asked to complete a demographic questionnaire, about themselves and the patient population they serve. They then received an e-mail with a link to the toolkit and a mixed-form electronic questionnaire via the platform that included both quantitative and qualitative components. The toolkit included the HCP-facing Portfolio Diet infographic (Fig. 1) and a 4-minute video walkthrough.

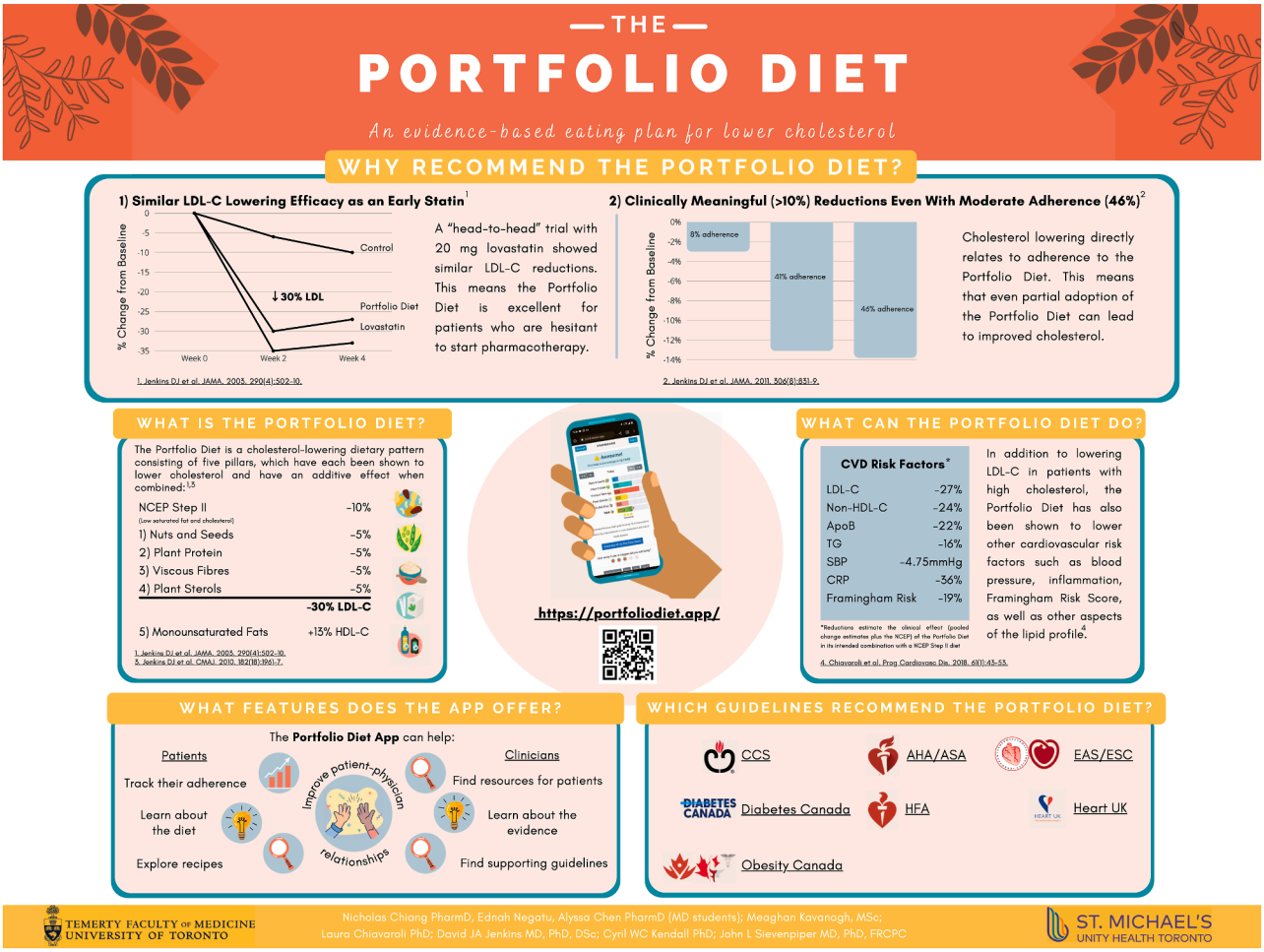

Figure 1. Round 1 version of the healthcare provider-facing Portfolio Diet infographic. AHA, American Heart Association; ApoB, apolipoprotein B; ASA, American Stroke Association; CCS, Canadian Cardiovascular Society; CRP, C-reactive protein; CVD, cardiovascular disease; EAS, European Atherosclerosis Society; ESC, European Society of Cardiology; HDL-C, high-density lipoprotein cholesterol; HFA, Heart Failure Association of the ESC; LDL-C, low-density lipoprotein cholesterol; NCEP, National Cholesterol Education Program; SBP, systolic blood pressure; TG, triglyceride; UK, United Kingdom.

After round 1, participant feedback was compiled and sorted by members of the research team (G.V., S.E.), to identify areas for improvement, and revisions were determined by consensus in meetings with the core team (G.V., S.E., M.E.K., J.L.S., L.C.). Revisions included a concise definition of the Portfolio Diet and explicit food examples for each each dietary pillar. The flow of the toolkit was adjusted from a circular to a linear format to better align with how participants naturally engage with the content. Text size was increased, and technical language was simplified to improve readability. Additionally, the QR code to PortfolioDiet.app was enlarged for better accessibility. The title and introduction were refined to clarify explicitly that the infographic serves a dual purpose—educating HCPs about the Portfolio Diet and introducing PortfolioDiet.app as a digital tool to educate and engage patients to support dietary adherence.

All HCPs who participated in round 1 were then contacted via e-mail, to assess the revisions. They received the revised toolkit and a short questionnaire asking them to rate their preference for the revised version on a Likert scale from 1 (I prefer the old version) to 5 (I prefer the new version). In round 2, a new sample of HCPs was recruited, using the same methods as those in round 1, and assessed the revised toolkit. All participants received an honorarium of $25 CAD as a gift card for completing the study.

Validity assessment

Content validity. Content validity assesses whether the key components of the toolkit accurately cover the intended subject matter.[26] The HCP-facing Portfolio Diet infographic was divided into sections, and participants rated the relevance of each section on a Likert scale of 1 (irrelevant) to 4 (extremely relevant). A content-validity index (CVI) was calculated for every section of the infographic. The CVI is the proportion of HCPs who rated the content as either 3 (relevant) or 4 (extremely relevant) using the following formula: CVI = (agreed sections)/(number of HCPs).[26] We used a commonly accepted threshold CVI value of 0.70 for substantial agreement, consistent with Lynn's method for studies with larger sample sizes ($n > 10$).[23,26] If participants

assigned a low rating (1 or 2), they were asked to provide an explanation, which informed revisions.

Face validity. Face validity assesses whether the toolkit appears to be clear, appropriate, and relevant to HCPs, the population meant to use it.[27] Participants rated the infographic and the video on 8 and 9 items, respectively, using a Likert scale of 1 (strongly disagree) to 5 (strongly agree), to assess clarity, content accuracy, knowledge acquisition, and clinical usability. A face-validity index (FVI) was calculated for each item as the proportion of HCPs in agreement (score of 4 or 5) using the following formula: FVI = (agreed sections)/(number of HCPs).[27] We applied the same threshold FVI of 0.70 for substantial agreement. Participants who either disagreed or strongly disagreed (score 1 or 2) were asked to provide an explanation, which informed revisions.

Data analysis

Qualitative data were summarized by collating all open-ended responses from the questionnaire and manually sorting them into either the categories of either strengths or limitations. Areas for improvement were identified in responses to open-ended questions and are summarized in Supplemental Table S1. Quantitative data were analyzed descriptively using R (4.3.2) and RStudio (2023.12.1+402; both R Foundation, Vienna, Austria).

Results

The characteristics of the HCPs who participated in the first and second round of this study are summarized in Table 1. The characteristics of the patient populations served by the HCPs who participated in this study are summarized in Supplemental Table S2.

Round 1

A total of 21 HCPs participated in round 1 (Fig. 2). Most were physicians (34%) or registered dietitians (33%), identified as female (90%), were White (57%), East Asian (19%) South Asian (10%), or mixed ethnicity (10%), and were aged 18-30 years (62%). The HCP-facing Portfolio Diet infographic was divided into sections (A-F; Fig. 3). The CVI values for each section are shown in Table 2. The FVI values of each item for the infographic and the video are shown in Tables 3 and 4, respectively. The corresponding means and standard deviations (SDs) for each item are presented in Supplemental Tables S3-S5.

All sections of the infographic, except section D, met the content validity threshold (CVI $\geq$ 0.70), with CVI values ranging from 0.86-0.95. Section D had a CVI of 0.67, indicating the need for revisions. All items met the face validity threshold (FVI $\geq$ 0.70), with FVI values ranging from 0.76-0.95 for the infographic, and 0.81-1.0 for the video.

Responses to open-ended questions are summarized in Supplemental Table S1. Participant feedback indicated that the infographic lacked explicit food examples, which would better support HCPs in educating patients. Additionally, HCPs reported reading the infographic in a linear fashion, rather than following the intended circular flow. Concerns also were raised regarding the text size and the use of jargon, and some participants were uncertain whether the infographic was designed to educate on the Portfolio Diet itself or the PortfolioDiet.app. Section D, which outlined clinical practice guidelines recommending the Portfolio Diet, was perceived as the least relevant component. Although some HCPs found this section reassuring, others suggested reducing its prominence.

After revising the toolkit to incorporate the feedback from round 1, we surveyed participants on their preference between the original and revised version. Among those who responded (n = 7), the mean preference score was 4.14 (SD 1.46; 1 = prefer the old version, 5 = prefer the new version).

Table 1. Characteristics of healthcare providers

Characteristic	Round 1 (n = 21)	Round 2 (n = 28)
Profession		
Physician (general practice)	5 (24)	15 (54)
Physician (specialist)	2 (10)	2 (7)
Registered dietitian	7 (33)	7 (25)
Pharmacist	5 (24)	2 (7)
Registered nurse	2 (10)	1 (4)
Naturopath	—	1 (4)
Age, y		
18–30	13 (62)	12 (43)
31–40	3 (14)	9 (32)
41–50	1 (5)	5 (18)
51–60	2 (10)	2 (7)
➢ 60	2 (10)	—
Sex		
Female	19 (90)	22 (79)
Male	2 (10)	5 (18)
Prefer not to answer	—	1 (4)
Visible minority		
Yes	7 (33)	8 (29)
No	14 (67)	19 (68)
Prefer not to answer	—	1 (4)
Ethnicity		
White	12 (57)	14 (50)
East Asian	4 (19)	5 (18)
Middle Eastern or North African	—	4 (14)
South Asian	2 (10)	1 (4)
Southeast Asian	—	1 (4)
Indigenous (North America)	1 (5)	—
Mixed ethnicity	2 (10)	1 (4)
Prefer not to answer	—	2 (7)

Values are n (%). Percentages may not total 100% due to rounding.

Round 2

A total of 28 HCPs participated in round 2 (Fig. 2) and reviewed the revised toolkit, shown in Figure 4. Most HCPs were general practitioners (57%), identified as female (79%), were White (50%), East Asian (18%) or Middle Eastern and/or North African (14%), and were aged 18-30 years (43%) or 31-40 years (32%). The revised HCP-facing Portfolio Diet infographic in round 2 was divided into sections (A-F; Fig. 5).

The CVI values for round 2 for each section of the infographic are shown in Table 2, and the FVI values for each item for both the infographic and video are shown in Tables 3 and 4. The CVI values, ranging from 0.86-1, showed improvements across all sections of the infographic. Notably, the CVI value for section D, which previously did not meet the threshold for substantial agreement (CVI = 0.67 in round 1), improved to 0.86 in round 2. The FVI values improved across most domains, ranging from 0.79-1

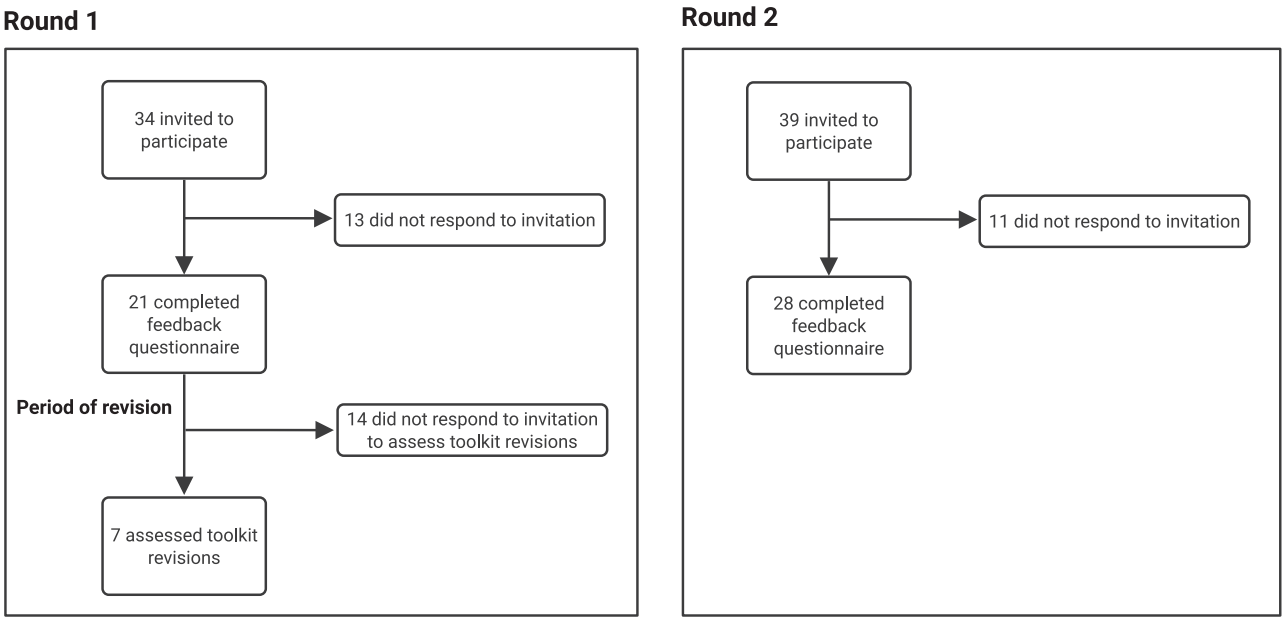

Figure 2. Flow of participants through the study.

for the infographic, and 0.89-1 for the video. Notably, of the face-validity items, HCPs reported that the infographic and video increased the following: their knowledge of the Portfolio Diet and PortfolioDiet.app ($FVI_{infographic}$ = 1.0; FVI_{video} = 0.89); their confidence in recommending the Portfolio Diet and the app to their patients ($FVI_{infographic}$ = 1.0; FVI_{video} = 0.89); and their confidence in recommending the toolkit to other clinicians ($FVI_{infographic}$ = 0.89; FVI_{video} = 0.89).

Overall, the CVI and FVI values for each section of the revised HCP-facing Portfolio Diet toolkit met the threshold of 0.70.

Discussion

This study assessed the content and face validity of an HCP-facing toolkit designed to support the implementation of the Portfolio Diet in clinical practice. Content and face

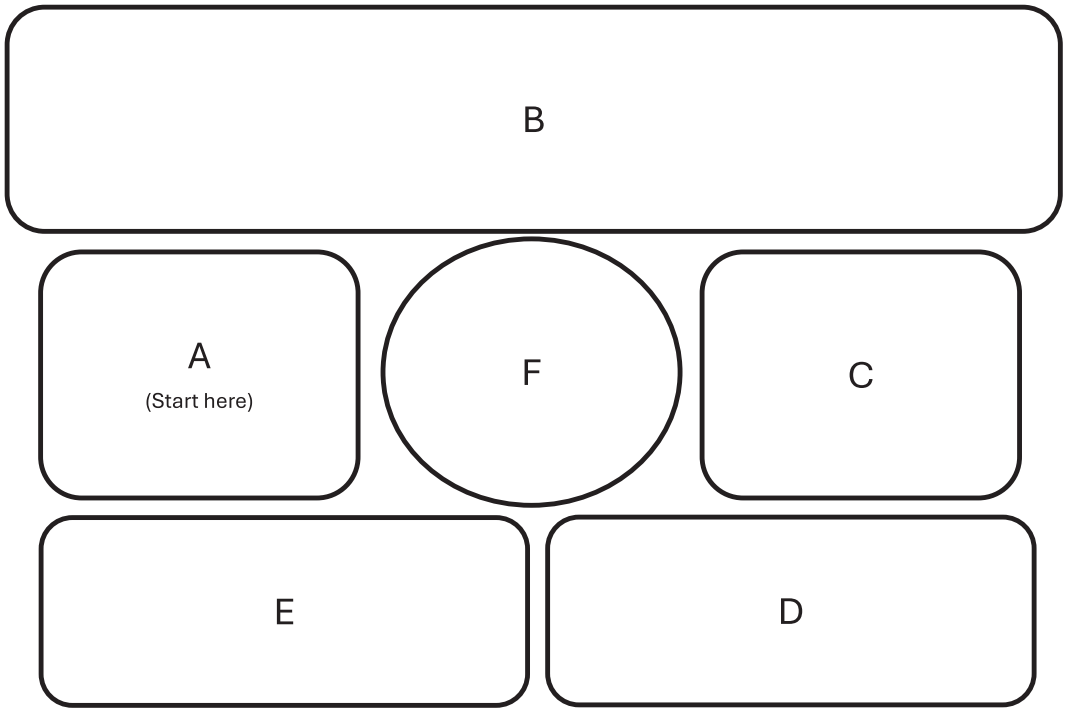

Figure 3. Sections of the healthcare provider-facing Portfolio Diet infographic assessed in round 1.

Table 2. Content-validity index values of infographic sections

Infographic section	CVI	
	Round 1 (n = 21)	Round 2 (n = 28)
A	0.90	1.0
B	0.90	0.96
C	0.95	0.86
D	0.67	0.86
E	0.95	0.86
F	0.86	0.86

CVI, content-validity index.

validity are important indicators of an instrument's quality, and the final HCP-facing Portfolio Diet toolkit showed strong content and face validity.

In round 1, all sections of the infographic, except section D, met the content validity threshold, and all FVI values for both the infographic and the video met the threshold for face validity. Participant open-ended feedback highlighted areas for improvement, including the need for explicit food examples, a clearer infographic structure, and reduced use of jargon.

After incorporating these revisions, the CVI for section D increased from 0.67 to 0.86, and all CVI values ranged from 0.86-1, reflecting greater agreement among HCPs regarding content relevance of the infographic. Similarly, FVI values improved across most domains, with scores ranging from 0.79-1 for the infographic and 0.89-1 for the video, indicating that the revisions enhanced the clarity, content accuracy, knowledge acquisition, and potential clinical use of the toolkit.

Implications

The improvements observed between rounds 1 and 2 underscore the importance of repeated assessment and refinement guided by end-user feedback to optimize knowledge-translation tools. The present study used a structured content- and face-validation process, engaging HCPs to refine the HCP Portfolio Diet toolkit, to ensure that it met established validity thresholds, which are key determinants of knowledge-translation tool quality and effectiveness.[28] The finalized, validated toolkit has the potential to increase HCP knowledge of the Portfolio Diet and PortfolioDiet.app and enhance confidence in their clinical application, as both were rated strongly among HCPs in the present study. A similar, iterative, end-user-informed process has been successful in the development of a prediabetes education toolkit, which showed improved HCP knowledge, supported patients, and informed changes to practice.[29] This result is in line with previous findings indicating that educational tools, including toolkits, improve end-user knowledge and inform beneficial changes to practice in different contexts.[30]

Given that dietary interventions still often are underutilized in managing dyslipidemia and cardiovascular risk, well-designed knowledge-translation tools for HCPs can bridge gaps between evidence-based guidelines and clinical practice.[31] The Portfolio Diet is robust and evidence based. A head-to-head randomized controlled trial demonstrated that the diet resulted in the same low-density lipoprotein-cholesterol and C-reactive-protein reductions (30%) as statin therapy.[32] A subsequent systematic review and meta-analysis confirmed these lipid-lowering effects and demonstrated improvements in other cardiovascular risk factors, including non-high-density lipoprotein cholesterol, apolipoprotein B, triglycerides, and blood pressure.[33] The Portfolio Diet also has been associated with a lower risk of type 2 diabetes in a prospective cohort study and with clinically meaningful reductions in hemoglobin A1C (HbA1c) among adults with type 2 diabetes in secondary analyses of 2 randomized controlled trials.[34-36] Taken together, these findings

Table 3. Face-validity index values for the infographic

Item	FVI	
	Round 1 (n = 21)	Round 2 (n = 28)
The tool is clear and understandable	0.95	0.96
The tool uses appropriate language and wording	0.90	1.0
The tool flows in a logical manner	0.81	0.93
This tool is an accurate representation of the "health behaviour" or "lifestyle" section of clinical practice guidelines for nutrition therapy in dyslipidemia	0.76	0.93
This tool increases my knowledge of the Portfolio Diet and PortfolioDiet.app	0.90	1.0
This tool increases my confidence in recommending the Portfolio Diet and Portfolio Diet App to my patients	0.95	1.0
I would use this tool to help me decide on whether or not to recommend the Portfolio Diet and/or PortfolioDiet.app to my patients	0.81	0.79
I would be confident recommending the use of this tool to other clinicians	0.86	0.89

FVI, face-validity index.

Table 4. Face-validity index values for the video

Item	FVI	
	Round 1 (n = 21)	Round 2 (n = 28)
The video is clear and understandable	1.0	0.96
The video flows in a logical manner	0.95	0.96
The video progresses at an appropriate pace	1.0	0.96
The video uses appropriate language and wording	0.95	1.0
This video conveys the information in the infographic appropriately	0.90	1.0
This tool increases my knowledge of the Portfolio Diet and PortfolioDiet.app	0.90	0.89
After watching this video, I understand the clinical use of the Portfolio Diet	0.90	0.89
This video increases my confidence in recommending the Portfolio Diet and Portfolio Diet App to my patients	0.86	0.89
I would be confident recommending the use of this video to other clinicians	0.81	0.89

FVI, face-validity index.

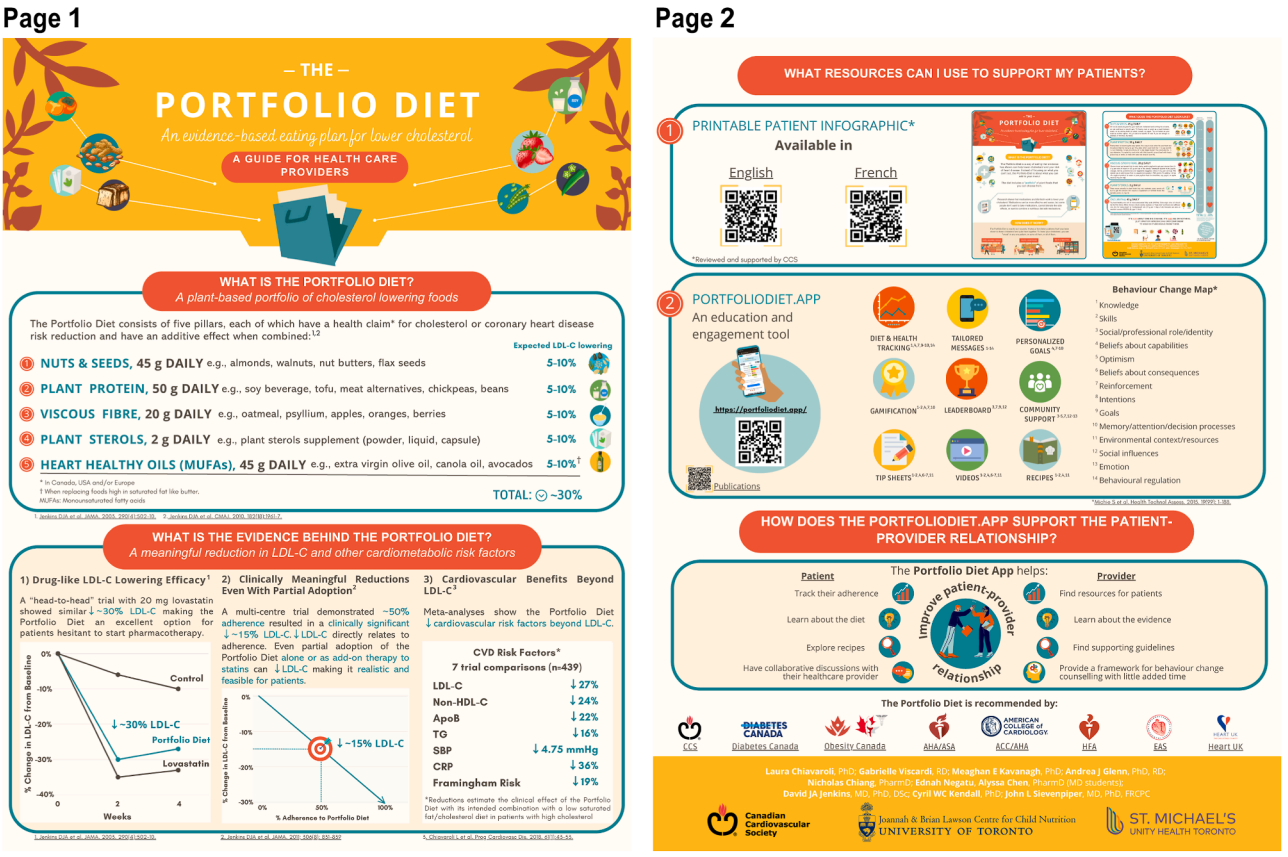

Figure 4. Revised healthcare provider-facing Portfolio Diet infographic used in round 2. ACC, American College of Cardiology; AHA, American Heart Association; ApoB, apolipoprotein B; ASA, American Stroke Association; CCS, Canadian Cardiovascular Society; CRP, C-reactive protein; CVD, cardiovascular disease; EAS, European Atherosclerosis Society; HDL-C, high-density lipoprotein cholesterol; HFA, Heart Failure Association of the European Society of Cardiology; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; TG, triglycerides; UK, United Kingdom.

underscore the potential large impact of the Portfolio Diet and PortfolioDiet.app in clinical practice, if they are effectively implemented using validated tools such as the HCP Portfolio Diet toolkit.

In Canada, only 30% of family physicians in primary care report using any nutrition-related resources, and self-directed learning has been identified as the most significant contributor to HCP nutrition knowledge.[37] This finding is in line with other studies involving HCPs that have identified the need for evidence-based resources to promote the integration of nutrition counselling into routine practice.[38,39] Tools such as infographics are used increasingly in healthcare as a cost-effective solution to communicate evidence-based recommendations in a clear and engaging format.[40] For chronic disease management, including CVD, infographics can help distill complex information and results from clinical trials into accessible visual summaries that support HCPs in providing patient counselling. Additionally, most Canadians own a smartphone (88%), and their use among older adults has increased substantially in recent years.[41,42] Therefore, educating HCPs about the Portfolio Diet and PortfolioDiet.app, as a patient-facing digital education and engagement tool, can support the translation of guidelines in practice and facilitate dietary adherence among patients. HCP involvement in both the development and implementation of such tools is important, as their endorsement can drive successful integration into practice.[43]

Future directions

PortfolioDiet.app, as the delivery vehicle for a broader behaviour-change program, will be implemented in multiple large-scale randomized controlled trials, including the following: a Canadian Institutes of Health Research—funded pragmatic trial involving 1100 high-risk adults in primary care across Ontario (ClinicalTrials.gov identifier: NCT06919302); a randomized controlled trial in 300 adults with hypertension and obesity, and 50% with type 2 diabetes (ClinicalTrials.gov identifier: NCT06907862); part of a plant-based intensive lifestyle intervention program for diabetes remission in 160 adults with early type 2 diabetes (< 6 years since diagnosis) and obesity (ClinicalTrials.gov identifier: NCT06906172); and a community-based study of 150 ethnically diverse adults in the Peel region of Ontario (ClinicalTrials.gov Unique Protocol ID: 46464). These trials will assess the implementation of the Portfolio Diet delivered through an interactive behaviour-change program using PortfolioDiet.app in both primary care and community settings, providing evidence for its effective integration into routine dietary counselling to manage noncommunicable chronic diseases in Canada, with application beyond.

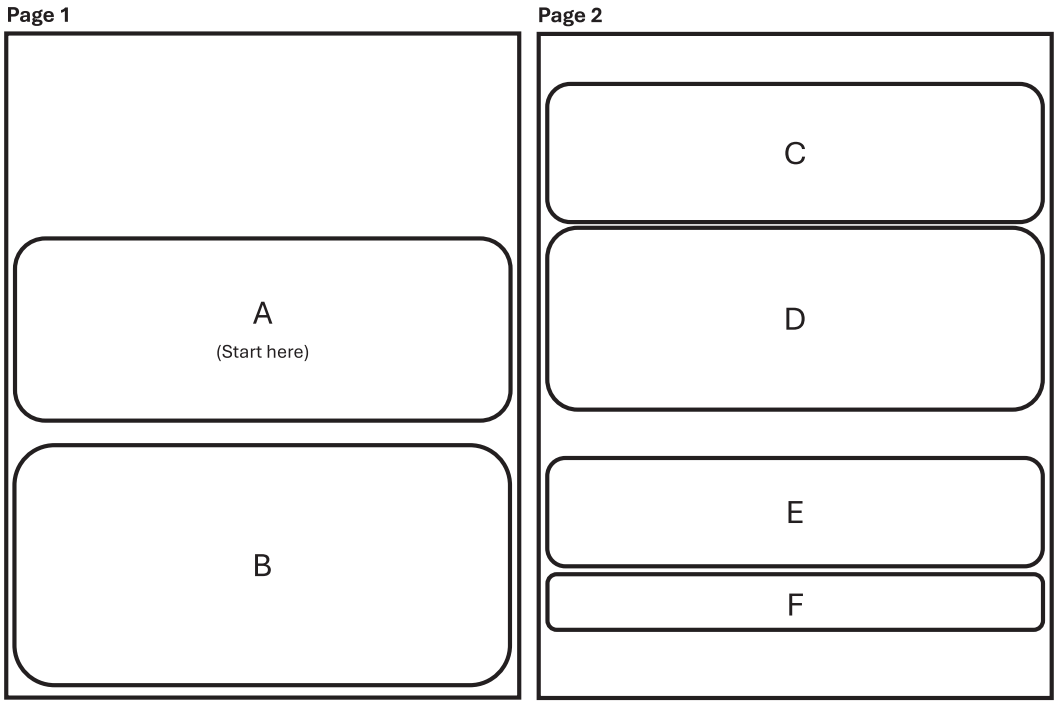

Figure 5. Sections of the healthcare provider-facing Portfolio Diet infographic assessed in round 2.

Strength and limitations

This study has several strengths. It is the first to assess the content and face validity of an HCP-facing toolkit designed to support the implementation of the Portfolio Diet and PortfolioDiet.app in clinical practice. The structured content and face validation process, based on Lynn's methodology, ensured a rigorous assessment of the toolkit's clarity, relevance, and applicability. Additionally, the study engaged a diverse group of HCPs, including physicians, registered dietitians, registered nurses, pharmacists, and naturopaths, who are key points of contact to translate clinical practice guidelines, including those on nutrition therapy. Their expertise provided valuable insights that guided the refinement of the infographic and video, as part of the HCP Portfolio Diet toolkit, enhancing its potential to be integrated in routine clinical practice. The design of this study, incorporating feedback and repeated assessment, allowed for revisions that strengthened the toolkit's validity. The consistently high CVI and FVI values across items for both the infographic and video post-revisions indicate that the final version aligns well with HCP needs.

A limitation of the study is that only 7 HCPs from round 1 provided feedback on the revised toolkit. However, clear consensus occurred among these HCPs in favour of the revised version. Additionally, although the present study demonstrated content and face validity, we did not assess construct validity, as we did not assess whether the HCP Portfolio Diet toolkit increased knowledge or influenced other intended outcomes, because we relied on self-reported measures. Future research should evaluate HCP uptake and application in practice. Although the study included a diverse range of HCPs in North America who serve a variety of patient populations, broader validation in different clinical settings may further enhance the generalizability of findings.

Conclusions

This study validated the HCP-facing Portfolio Diet toolkit consisting of an infographic and a video designed to support the implementation of the Portfolio Diet and PortfolioDiet.app in clinical practice in a diverse group of HCPs in North America. Through a 2-round content- and face-validation process, key improvements were made to enhance clarity, relevance, and usability based on HCP feedback in round 1. The final version of the toolkit met established validity thresholds, indicating strong agreement on the toolkit's content relevance and potential for clinical use. As a freely available toolkit hosted as part of the series of companion resources on the Canadian Cardiovascular Society website,[22] these findings support the toolkit's role as a practical resource for educating HCPs on the Portfolio Diet and PortfolioDiet.app, facilitating improved translation of cardiovascular clinical practice guidelines on nutrition therapy.

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Data Availability and Materials

All data generated or analyzed during this study are available in the article, supplemental material, or from the corresponding author upon reasonable request.

Ethics Statement

This project was formally reviewed and approved by the Research Ethics Board at the University of Toronto.

Patient Consent

All participants provided informed consent.

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Disclosures

Full disclosures are available in Supplemental Appendix S1.

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Supplementary Material

To access the supplementary material accompanying this article, visit *CJC Open* at https://www.cjcopen.ca/ and at https://doi.org/10.1016/j.cjco.2025.08.015.