

A framework for the dissemination and utilisation of nutrition research for health promotion and healthcare practice

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Abstract

Research dissemination has become a significant concern for linking scientific evidence with practice. Universities and research centres are a seedbed for new and emerging research. Research dissemination practices about nutrition and diet must increase through health promotion and education given the concerning global prevalence of diseases related to nutrition and diet. We constructed a research dissemination framework for use in the disciplines of nutrition and dietetics, or other areas with clinical components. The designed framework consists of tools to improve communication of research, links with key departments to increase outreach, and impact measures. This framework provides a tailored, cost-effective and sustainable way to measurably increase the use by research staff of resources to disseminate their findings to key stakeholders in clinical practice and research institutions. This also has the potential to be adopted by academics and researchers so that the end-users such as health professionals, policymakers and public health authorities can be reached. The increased uptake of research outputs can inform health education and promotion strategies that benefit wider society given the concerning global prevalence of diseases related to nutrition and diet.

Introduction

The outreach and impact of research remain an important consideration in academia. A structured and tailored approach to disseminating research findings in the discipline of nutrition and dietetics is presented. Perhaps more than many, this field faces an acute need to improve the dissemination of its findings into clinical practice. This is in light of the prevalence of nutrition-related diseases and of diet-related misinformation that reaches the public.

Dissemination is defined as “the targeted distribution of information and intervention materials to a specific public health or clinical practice audience. The intent is to spread knowledge and associated evidence-based interventions” (Glasgow et al. 2012, 1275). Dissemination, therefore, has become a significant concern for linking scientific evidence with practice (Tabak et al., 2012; University of Bristol, 2018) as communicating reputable and up-to-date information represents a win-win situation for researchers and the public (Kerner et al., 2005). Support for research on nutrition and dietetics has been gaining traction; universities and research centres are a seedbed for new and emerging research. However, governments and industries that fund this research expect a general public benefit and tangible impact on target populations, and progress in communicating research findings to the direct recipients (the end-users or patients) has lagged (Waddell, 2001; Edwards, 2015).

Nutrition information is highly relevant to lay audiences and society and to future and current health professionals. The worse a population’s general health is, the higher the demand placed on health services (New Zealand. Ministry of Health, 2018), and the less productive people will be in their different jobs (Waddell, 2001). We live in a digital world and, although research outputs need to be published in peer-reviewed academic journals, there is a need for these

outputs to reach broader audiences and policymakers (Kerner et al., 2005; Green, 2019). These circumstances place the onus on researchers to find a way to adapt to what the world needs from them; if they received proper support, research dissemination would not be such a time-consuming, ineffective (Edwards, 2015) and insufficiently advantageous (Kerner et al., 2005) activity. Furthermore, dissemination that leads to a positive societal impact can be more rewarding than getting cited in academic arenas (Green, 2019).

Disseminating nutrition knowledge would be dependent on the location and profile of the end-user. For academic circles, indexed journals, scientific societies, professional bodies, and conferences are conventional arenas to disseminate research that can be used in clinical practice (Sanchez-Muniz, 2018). Nowadays, given the global health overview, there is relevance in teaching health professionals how to signpost patients towards specialists and, when possible, prescribe proper diets for almost all health issues (Barnard, 2019). An example shows that some databases have been developed to help to disseminate science-based answers to health professionals (Demory-Luce et al., 1999). Furthermore, patients' trust in their GP has been reported to be high (New Zealand. Ministry of Health, 2018). The current evidence shows that physicians and general practitioners are not trained to recognise the fundamental causes of many nutrition-related diseases (Buttriss, 1996; Crowley et al., 2015). This perhaps does not mean they are not interested in being trained, but that structural mechanisms are not in place to allow this (Barnard, 2019).

Other tools have recently exemplified successful dissemination practices via low-cost and user-friendly platforms, e.g., targeting teenagers or mothers through social media (Facebook, Pinterest, Instagram, and LinkedIn) (Barnard, 2019; Black, 2017). Another study found the use of WhatsApp effective to distribute a pack for anaemia prevention with nutrition information (Kumari, 2017). In community interventions, psychological theories and models and a peer education approach have worked to promote certain diets (Oli et al., 2019).

Overall, the internet (webpages, social media, blogs, podcasts) seems to be the preferred source of health information (Lauzirika, 2016), presenting science communication with opportunities and challenges. A substantial number of non-professionals in nutrition or dietetics have, in recent years, taken to the internet to offer unqualified advice for financial gain through their blogs or social media presence (Peregrin, 2017). Additionally, the often-confusing nutrition guidelines have only contributed to disconcert the public and spreading outdated information given the gap between research conducted and developing these guidelines (Brown et al., 2019). This has led to stereotyping and labelling diets, eating practices, or foods (e.g. labelling food as “good” or “bad”) (Ramachandran et al., 2018). These are some situations in which dissemination can add value.

There is a growing interest in science, medicine and health across society (Lauzirika, 2016) and a crescent myriad of media and communication tools for researchers to share their research outputs (Peregrin, 2017). Currently, there is no specific strategy to do this in this major University in New Zealand (setting). Clinical practice can be highly benefited from research dissemination. Peregrin states that the professional standards of nutrition and dietetics practitioners say that they “must support and promote high standards of professional practice” (2017, 625), and avoid engaging with false or misleading practices (Peregrin, 2017). The direct experience and opinion of healthcare practitioners should be supplemented with other research evidence (Dobbins et al., 2002), and nutrition disciplines that produce research often have links with clinical practice.

Various major universities across New Zealand should consider disseminating high-quality research in their top objectives (Universities New Zealand, 2020), which shows how crucial it is to translate and communicate research outputs to lay audiences to remedy the lack

of evidence-based information, especially in social media and non-academic environments (Green, 2019). Although there is evidence of existing frameworks and models to support not only dissemination (Dobbins et al., 2002) but also the implementation of research (Tabak et al., 2012), none of them is tailored to universities that are a seed of research and very often have also clinics for students' training. Additionally, academics' current workload and expectations have been a longstanding reported barrier to engaging in dissemination activities (Enders, 2005; Fernandez-Pena et al., 2008; Schnitzler et al., 2016).

Some lessons that the dissemination of nutrition knowledge have confirmed are, on the one hand, the need to ground outreach in the evidence base, and, on the other, the need to use graphs and images to increase the effectiveness of educational tools and tailor the message for the specific end-user (Stehle, 2007). Although the use of social media can be an effective way to disseminate reputable information (Lauzirika, 2016), and these platforms also contain marketing for food and beverages that can be harmful products for specific populations (Black, 2017). An international survey on dissemination and implementation practices for nutrition information across academics documented the following main barriers: lack of expertise and organisational support, methodological challenges to dissemination, and funding/publishing priorities (Koorts et al., 2020).

Engaging in research offers the opportunity to significantly impact people's lives across the country and internationally through the translation of research into clinical practice (Edwards, 2015), and policies might emerge from the translation of robust scientific evidence (Kerner et al., 2005). To this end, understanding the context and characteristics of the target audience is essential; the selected university is an ideal arena to test for and produce health improvements since academic, administrative staff, and students are the end-users of many

research outcomes. An example of how evidence has been translated into practice, and also showcased through various successful dissemination practices (Howie, 2019), was part of the rationale for designing an RDF that can be applied to another relevant research. This paper aims to communicate and explain how a research dissemination framework was designed.

The selected university was ideal to design the RDF given the broad scope of stakeholders benefiting from this outreach. The target population was categorised into three groups. The closest population (first group of stakeholders) that could be the target was the academic community (including students) within the university across all disciplines at the university. Academics and students have contact with the second group of stakeholders, composed mostly of clinicians in medical sciences (GPs and other allied health professionals) who can pass this information to patients through the university clinics. The third group of stakeholders is any person accessing university clinics or public lectures, either as internal (administrative staff, students, etc) or external users, as well as university partners working in the policy, public health, and food and health industry sectors.

Before constructing the RDF, no specific dissemination practice was in place in the DoND. Nevertheless, Twitter and Instagram accounts were in place, and these attracted many followers due to the credible (evidence-based) information on nutrition, diet, and healthy lifestyles these channels provide, in a user-friendly platform. The success may be due to various factors: engaging photographs to amplify the message (Peregrin, 2017), condensing the information to avoid overwhelming the reader, and targeting many audiences (Waddell, 2001). Despite this, only a minority of researchers were engaged in these practices. A framework adhering to high professional standards was necessary to provide ideas and tools to researchers.

It was necessary to increase the researchers' knowledge and awareness of the potential platforms to disseminate their research outputs.

Construction and development of the research dissemination framework

This work was inspired by an academic visit awarded to the first author, who aimed to develop a foundational strategy that facilitated researchers' dissemination practices to connect with end-users, channelling the information through clinical and academic practices. The aims of designing this framework were to offer researchers accessible ways of communicating their research and to decrease the impact on time and resources that outreach and dissemination practices have for research staff.

According to the first author's doctoral training, this framework was developed, experience in doing and supporting research, and professional background as a dietician. We based our framework on theoretical grounds discussed in successful case studies, researchers' experiences, and resources available in the selected university. The RDF was informed by successful case studies and frameworks used in other geographical and social contexts, such as Australia (Welter, 2000), Canada (Dobbins et al., 2002; Jacobson et al., 2003), the US (Brownson, 2018), and the UK (University of Bristol, 2018). These places were selected given that the DoND currently uses guidelines from those countries to inform theoretical and practical aspects of dietetics and nutrition. We liaised with key academics to strengthen the framework. The elaboration of this framework benefited also from departments with experience in and support for research dissemination.

Two tools and three links with key departments were part of the RDF. The first developed tool was a Database of Dietetics and Nutrition Research (ReDa) that is meant to contain the DoND's most essential research outputs. Once DoND's researchers shape academic publications into resources that support their message clearly and plainly (Norwegian National Committees for Research Ethics, 2020), they need to connect with the intended audience through university clinics, social media, or other events. The main components and subcomponents of the ReDa are shown in the Figure 1. This tool aims to be populated with the following core areas: title and topic, key messages, timespan and impact, end-user and labels. Potential stakeholders and audiences, media, journalists, other researchers in DoND, and practising students, can easily pick up these brief details. The content and format should be understandable and shareable. Academics and investigators should decide whether their research outputs would populate this database or would be disseminated through other resources and channels. They are responsible for evaluating and critically appraising their own research outputs. The plan was to collate outputs every month, preferably before DoND's monthly meeting taking place, to corroborate what outputs were delivered with research when necessary, during the meeting. The second author was undertaking this responsibility along with some nutrition students.

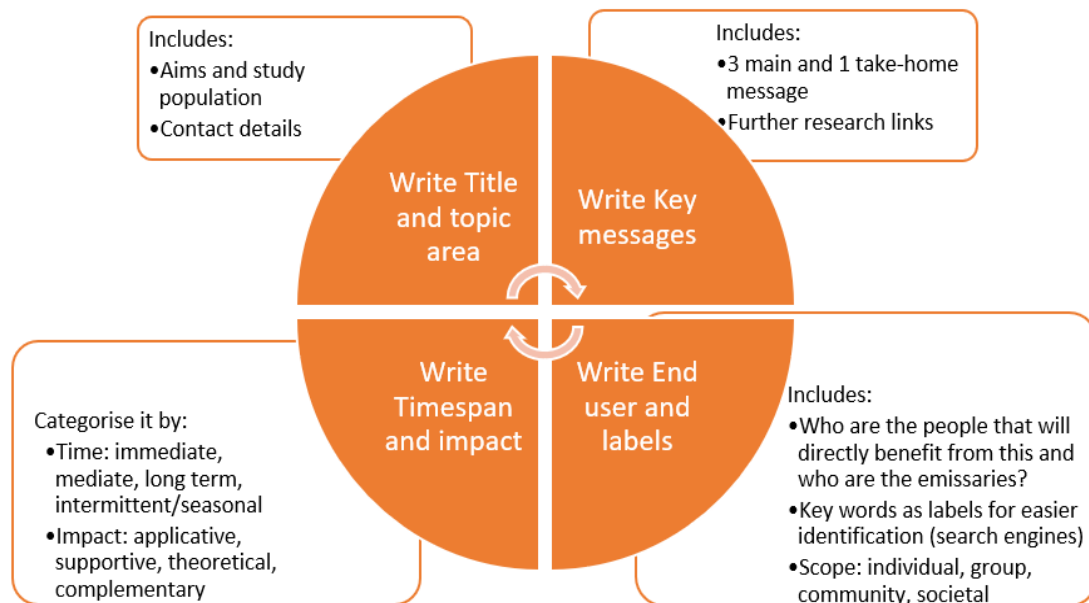


Figure 1 Database of Nutrition and Dietetics research. Researchers should add the relevant information about each research output, to feed the database accessible to other stakeholders

The second tool serves after each output is assessed and cleared for dissemination by the authors, so they can access the variety of means accessible to researchers at the DoND. To this end, a Basic Guide was created and included information provided by the Media and the Public Engagement Programs with links and tips for supporting academics when disseminating their research. This guide contains valuable information, links, and tips for supporting academics when disseminating their research. Moreover, it contains a section about health journalism and how to deal with media through different ways and channels. The BG was created to support researchers' engagement with written, oral and multimedia communication through media, social media and public events, actions that would meet the requirements for effective research dissemination.

The first link was a key department that delivers workshops and courses and can promote awareness of the ReDa amongst teaching staff, researchers, and postgraduate students. The second was the Public Engagement Programs, which provides research staff with a robust

platform to debate and trial their ideas by presenting a course/workshop related to their research (and its practical use) to a lay audience. This department organises public lectures twice a year with more than 100 participants, generally enthusiastic adult learners, attending morning or afternoon sessions. Public lectures are also in charge of organising specialised series for instance in health and wellbeing, and they attract audiences from a variety of sources (media, radio, newsletters to patients and research participants, clinicians, etc).

The third link was the Media and Communication department, which was scheduled to deliver researchers a training seminar to communicate with lay audiences and was ready to reserve a monthly slot on the Auckland radio. The rationale behind creating these links was that when research users are involved from the outset, research is more likely to have practical significance, future studies are more likely to be designed appropriately, and research users are more likely to have an 'investment' in using the results. During informal conversations, researchers in the DoND and clinic managers showed to be keen on sharing their outputs for public dissemination and were happy to engage with the media. One of them mentioned, "if we justify to GPs our (dietitians) recommendation and make this clear for patients, they will then make an informed choice". Therefore, the evidence and knowledge that populates the ReDa and the dissemination that results from these key links can be used to provide high-quality research evidence. We hope that this can serve to convince other potential stakeholders to create partnerships amplify networks with practitioners, policymakers and other stakeholders. These then can reach policymakers and educational planners so that they can advocate for a change in society (Green, 2019; Norwegian National Committees for Research Ethics, 2020).

Some ways of taking this RDF forward include teaching students a critical appraisal of social media and creating a monthly bulletin circulated to clinics' patients and research participants. Since participants should receive something from the research they helped building (Norwegian National Committees for Research Ethics, 2020), this RDF has a way of providing it. This could also promote dialogue between society and academics.

It is crucial to have indicators of success. Considering the tools and links created, the Table 1 presents the different time frames and settings in which the RDF can have a measurable impact. At the time of writing this article, the short-term evaluation through academics and students in the DoND was in the process of completion, however when the COVID-19 pandemic hit, this was halted and will be restarted when the vaccination campaigns conclude.

Table 1 Indicators for Evaluating the RDF Divided per Group of Stakeholders and per Time Frame

| Time frame | Group of stakeholders | | |
|-------------------|--|--|---|
| | Academic | Practice | Policy |
| Short term | Number of publications, citations and impact factor of peer reviewed publications from research staff | Scheduled talks/workshops from academics in DoND for summer/winter weeks (PEP) and reviewed feedback | Attendance from research and academic staff to media training |
| Medium term | Number of consultations of the tools and resources from academics/PGR students Consultations/requests for bank of research from other departments/users across the university | Invitations for radio slot or other media activities Contributions to the monthly bulletin through infographics, factsheets, videos, etc.) from PGR and academic community | Mention of research outputs/academic work by official social media accounts (hashtags, likes, etc.) |
| Long term | Number of downloads of studies added to the ReDa and mentions in the monthly bulletin | New subscriptions to the monthly bulletin through clinic and research participants and number of clics per links leading to a research dissemination tool/event Use of materials designed from research outputs to distribute in the university clinics | Invitations to consultation events after documented effective dissemination practices |

Results

Dissemination is crucial to offsetting dubious information - especially for research relevant to health, nutrition and diet. The RDF has the potential to produce several outcomes: a) Greater use of reputable and updated information from clinicians and stakeholders involved in clinics that deliver this information to patients; b) A comprehensive and practical set of tools to motivate, support and increase researchers' awareness and practice of sharing and disseminating their research outputs; c) Newly created links with essential departments across the university can enhance, promote and support research dissemination practices at a faculty and university level; d) Greater presence in the Media and Public Engagement Programmes that, while in its early stages, shows potential to remain strong given the societal relevance of nutrition topics. When this framework was presented in a final meeting with academics belonging to the DoND, they agreed that we developed an efficient and sustainable research dissemination framework to enable the use of existing infrastructures and tools that can support

An evident limitation is that this RDF is tailored to the selected university's current resources. However, this framework provides a variety of benefits: it is inclusive in its applicability (accessible to any academic regardless of their experience in dissemination), supports dissemination targeting individuals and groups, is funding-independent, sustainable in the long term, realistic (easy to follow up and evaluate), and easy to trial with target audiences and end-users through clinics and research recruitment cohorts. Consequently, any university or research institution with direct links to clinicians (who deal with nutrition and dietary issues) can tailor the tools or links forming this framework, taking into account the measures of impact as well.

One of the most valuable uses of this RDF will be through health professionals, who do not often have discussions on nutrition and diet with patients (Cumming, 2017) but are more likely

to answer common nutrition/diet questions with evidence-based information (Barnard, 2019). This framework also complies with making research accessible to small communities such as the university's professional staff and research staff and other stakeholders such as public health specialists, planners, and Media (New Zealand, Ministry of Health 2018). Successful interaction between researchers and media is a cost-effective strategy to produce health benefits within the population (Cecchini et al., 2010; Radder, 2017).

Simplifying and exchanging messages across relevant groups of stakeholders (Waddell, 2001) should be the leading rule after researching diet and nutrition topics. Future work can be focused on the RDF the medium- and long-term effectiveness, and further research can describe how this RDF can be tailored and effectively implemented in other research or clinical environments.

Implications for Policy and Practice

- The designed framework presents a tailored, funding-independent, and sustainable model to increase the uptake of reputable nutrition, public health and health promotion information. It helped increase awareness of research dissemination amongst researchers and academics across the Discipline of Nutrition and Dietetics.
- The structure, main outcomes and development of the framework can serve as an example for other universities. Researchers may use the comprehensive and practical set of tools designed to motivate and support them to share and disseminate their research outputs and have a greater presence in the media and public lectures.
- A framework that can help translate research outputs into clinical practice and public health policy designers is essential for nutrition and dietetics disciplines. This can be adopted by academics and researchers to reach end-users such as health professionals,

policymakers, and public health authorities. The increased uptake of research outputs can inform health strategies that benefit wider society.

Conclusion

The field of nutrition and dietetics research faces the need for good quality and effectively disseminated research evidence to both professional clinical and lay audiences. This is consistent with current academic priorities for public engagement and research impact and public healthcare priorities. We presented the development of a tailored framework for research dissemination that has the potential of making research highly valuable for clinicians and policymakers when reproduced across academic settings with similar characteristics. In this sense, key stakeholders may take more informed and evidence-based decisions that guide public health decisions.

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