Forum

How often should general practitioners provide nutrition care to patients? A forecasting activity to determine the target frequency for chronic-disease management in Australia

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Abstract. Supporting patients to have healthy dietary behaviours contributes significantly to preventing and managing lifestyle-related chronic diseases. ‘Nutrition care’ refers to any practice provided by a health professional to support a patient to improve their dietary behaviours and subsequent health outcomes. Approximately 3% of consultations by Australian general practitioners (GPs) involve the provision of nutrition care. The aim of the present paper was to forecast the potential implications of a higher frequency of nutrition care by GPs. Evidence on the effect of improved dietary behaviours on chronic disease outcomes, number of Australian adults estimated to have poor dietary behaviours and effectiveness of GPs providing nutrition care were taken into consideration. Using hypertension as a case example, for GPs to provide nutrition care to all hypertensive adults who would benefit from improved dietary behaviours, GPs would need to provide nutrition care in a target rate of 4.85% of consultations or 4.5 million different patients each year. The target aligns with the existing priorities for supporting chronic-disease prevention and management in Australia by increasing the rate that brief lifestyle interventions are provided by primary health professionals. This conservative target presents a considerable challenge for GPs, support staff, researchers and policy makers, but can be used to inform future interventions to support nutrition care by GPs.

What is known about the topic?

- General practitioners are able to support patients to have healthy dietary behaviours, which contribute to the prevention and management of chronic disease.

What does this paper add?

- The present paper provides a conservative target frequency that general practitioners provide nutrition care to patients, so as to facilitate meaningful improvements in health outcomes related to chronic disease.

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Additional keywords: general practice, nutrition therapy, nutritional management, primary care.

Introduction

Poor dietary behaviour is the most common risk factor for morbidity in Australia, and contributes significantly to the prevalence of lifestyle-related chronic diseases (World Health Organization 2003; Australian Institute of Health and Welfare 2012; Lim *et al.* 2012). Despite the existence of evidence-based guidelines for healthy eating (National Health and Medical Research Council 2013), it is estimated that most Australian adults have poor dietary behaviours (Australian Institute of Health and Welfare 2012). For example, nearly all (94%) adults in Australia consume fewer serves of vegetables than recommended and approximately half consume fewer serves of fruit than recommended (Australian Bureau of Statistics 2012; Health and Social Care Information Centre 2014; Moore and Thompson 2015). As a result, the promotion of healthy dietary behaviours is a priority for primary health care, and a key component of best-practice guidelines for primary health professionals (Diabetes Australia and Royal Australian College of General Practitioners 2008; Royal Australian College of General Practitioners 2015). 'Nutrition care' refers to any practice conducted by a health professional to support a patient to improve their dietary behaviours and subsequent health outcomes (Ball *et al.* 2010). Nutrition care may include any aspect of nutrition assessment, nutrition advice, nutrition counselling, as well as referral to other nutrition-focused services and health professionals, such as accredited practising dietitians (Ball *et al.* 2010).

General practitioners (GPs) are recognised as an ideal profession to support patients to improve their dietary behaviours (Ball *et al.* 2013b). Guidelines for GPs recommend that nutrition care is incorporated into consultations when clinically indicated (Diabetes Australia and Royal Australian College of General Practitioners 2008; Royal Australian College of General Practitioners 2015). Over 90% of adult general-practice patients are predicted to benefit from improvements in their dietary behaviours (Australian Institute of Health and Welfare 2012), and GPs are capable of providing nutrition care that results in improved dietary behaviours of patients (Ball *et al.* 2015). However, in Australia, GPs provide nutrition care to patients in ~3% of consultations (Britt *et al.* 2015). Clearly, a large practice-evidence gap exists regarding the frequency that GPs provide nutrition care, warranting further attention.

The barriers to GPs providing nutrition care are widely recognised, including lack of time, perceived lack of nutrition knowledge and low self-efficacy (Harris *et al.* 2012; Ball *et al.* 2013a). Interestingly, nutrition care has been identified as a significant independent predictor of shorter consultations with GPs in Australia (0.72 min shorter than mean; Britt *et al.* 2005). Regardless, these barriers have informed educational and workplace initiatives that aim to support GPs to provide nutrition care to patients more regularly (Harris *et al.* 2005; Edwards

E *et al.* 2015; Ball *et al.* 2016). Evaluations of initiatives for GPs often rely on self-reported practices in line with the procedures of the national annual General Practice Activity Project (Britt *et al.* 2015). However, these previous initiatives have not specified a target frequency of nutrition care that indicates whether an intervention has been successful in changing practice.

Optimising the frequency of nutrition care provided by GPs has the potential to influence patient health outcomes at an individual and population level. Better understanding the potential effect of increased nutrition care on patient health outcomes will directly inform targets for future initiatives designed to support GPs. Therefore, the aim of the present paper is to forecast the potential implications of a higher frequency of nutrition care by GPs than the current 3% of consultations. A conservative approach has been taken to inform a feasible target that interventions should aim to achieve in the future.

Why bother? Expected outcomes of improved dietary behaviours

The implications of poor dietary behaviours are well recognised. For example, with the latest review of the Australian Dietary Guidelines, over 55 000 peer-reviewed journal articles including meta-analyses of cohort and randomised controlled trial (RCT) studies were critically reviewed to examine health outcomes associated with various dietary intakes and patterns (National Health and Medical Research Council 2011). The review confirmed that increasing vegetable intake by one serve per day is associated with many improved health outcomes, including a 15–25% lower risk of coronary heart disease, 25% lower risk of weight gain and 20% reduced risk of stroke (Field *et al.* 2003; He *et al.* 2006; National Health and Medical Research Council 2011). The review found that for fruit, increasing intake by one serve per day is associated with 7% lower risk of coronary heart disease, 25% lower risk of weight gain and 11% lower risk of stroke (Dauchet *et al.* 2005; He *et al.* 2006; National Health and Medical Research Council 2011).

The improvements in health outcomes associated with increased fruit and/or vegetable intake is evident regardless of baseline intake (National Health and Medical Research Council 2011). Furthermore, the benefits continue for each additional serve consumed per day. This is important because strategies that help patients achieve any increase in fruit and/or vegetable intakes will result in meaningful improvements in health outcomes.

Can we do it? Effect of nutrition care provided by GPs

A systematic review of RCTs has shown that GPs have the potential to facilitate improvements in the dietary behaviours of patients with lifestyle-related chronic diseases (Ball *et al.* 2013b). Most interventions in the review involved brief nutrition care in standard consultations and observed improvements in the dietary behaviour of participants, such as a reduction of energy consumption of 0.7 MJ day⁻¹ (van der Veen *et al.* 2002), a reduction in

excessive alcohol consumption of 36% (Logsdon *et al.* 1989), a reduction of meat consumption to three serves or less per week (Sacerdote *et al.* 2006) and a reduction of fat intake of 5–10% (Beresford *et al.* 1997; Ockene *et al.* 1999; van der Veen *et al.* 2002). The interventions also observed an increase in fruit and vegetable intake by two serves per week (Sacerdote *et al.* 2006), an increase in fish intake to at least one serve per week (Sacerdote *et al.* 2006) and an increase in fibre intake of 0.55 g per 1000 kcal (Beresford *et al.* 1997). Despite some GPs reporting low self-efficacy in their ability to facilitate behaviour change (Harris *et al.* 2012; Ball *et al.* 2013a), this review suggested that an overall positive effect is seen when brief nutrition care is incorporated into consultations.

Enablers to GPs providing nutrition care are less clear, although important to facilitate greater frequency of care. Factors such as increasing nutrition knowledge (Lazarus 1997) and skills (for example, through motivational interviewing training; Edwards E *et al.* 2015) have been shown to support more favourable attitudes towards providing nutrition care. Early work from the USA has also suggested that there is an increase in the frequency of nutrition care by providing greater training to GPs (Lazarus 1997), warranting greater attention to these enablers.

Hypertension as a case study

Hypertension is a significant risk factor for coronary heart disease and other cardiovascular conditions, which can be prevented and managed through healthy lifestyle behaviours, including healthy dietary behaviours (World Health Organization 2003). The prevalence of hypertension is approximately one-third (31.6%) of Australian adults (Australian Bureau of Statistics 2012). Furthermore, hypertension is the most common ‘problem’ managed by Australian GPs, at 7.9 occurrences per 100 consultations (Britt *et al.* 2015). With over 89 million consultations provided by GPs each year, this equates to nearly 7 million consultations that include care for a patient with hypertension. Nutrition care is estimated to currently occur in 3% of consultations provided by Australian GPs (Britt *et al.* 2015). Assuming the frequency of nutrition care provided to patients with hypertension is similar to those without hypertension, this equates to ~210 000 consultations per year.

In a dietary-intervention study, where patients with hypertension (baseline systolic and diastolic blood pressure 131.3 ± 10.8 and 84.7 ± 4.7 mm Hg respectively) were provided with low-sodium foods for 3 weeks; systolic blood pressure reduced by an average of 11.4 mm Hg and diastolic blood pressure reduced by an average of 5.5 mm Hg (Appel *et al.* 1997). However, in practice, the expected outcome of providing brief, structured nutrition care in one consultation is a reduction in diastolic blood pressure of 4.0 mm Hg over 12 months (from 89.7 to 85.7 mm Hg; $P = 0.001$; Salkeld *et al.* 1997; Ball *et al.* 2013b). This is an

important finding because the high-quality Framingham heart study demonstrated that even smaller reductions (2.0 mm Hg) in population-wide diastolic blood pressure is associated with an estimated 17% reduction in the prevalence of hypertension, and 6% reduction in risk of coronary heart disease (Cook *et al.* 1995). Collectively, this suggests that GPs facilitating meaningful reductions in blood pressure at an individual level have the potential to contribute to population-wide health improvements.

How much is enough? Effect of different frequencies of nutrition care

To prevent and manage chronic disease, GPs would ideally provide nutrition care to all adult patients with poor dietary behaviours, estimated at 94% of consultations. This is based on the estimated number of adults in Australia who consume fewer serves of vegetables than recommended (Australian Bureau of Statistics 2014). Given that ~80% of consultations are with adult patients, this would mean an overall frequency of 74% of consultations if nutrition care for adolescents or children is excluded. Presuming the total number of consultations provided by GPs remains constant, this target is nearly 25 times more frequent than the current rate of nutrition care, and is unlikely to be achievable in the short- to medium-term future.

An alternative approach focusing on secondary prevention is to consider the provision of nutrition care for a common condition, such as the previous case example of hypertension. On the basis of (i) the total Australian population (23.13 million), (ii) the proportion of adults who consult a GP at least once per year (84%; Britt *et al.* 2015) and (iii) the proportion of adult patients in general practice (80%; Britt *et al.* 2015), ~15.5 million Australian adults receive care from a GP each year. Given that the prevalence of hypertension is currently 31.6%, this equates to 4.9 million Australian adults with hypertension. If 94% of Australian adults are estimated to have poor dietary behaviours, then 4.5 million adults with hypertension would benefit from receiving nutrition care from a GP at least once per year.

Fig. 1 displays the number of people who would receive nutrition care on the basis of the frequency of provision by GPs. The figure provides a conservative assumption that nutrition care is provided to different patients (rather than the same patient multiple times per year). The shaded section outlines the difference in reach between the current frequency of nutrition care, and the nutrition care required to reach 4.5 million adults. On the basis of these calculations, the target frequency is ~4.85% of consultations, an increase of 1.85% on the current rate of 3%. On the basis of the previous outcomes observed from nutrition care, this could reduce the prevalence of hypertension by 17% (Cook *et al.* 1995), which equates to over 735 000 fewer Australians with high blood pressure. This potential effect is clearly worthy of attention. The target does not account for other sources of nutrition care, such as

from allied health professionals and non-health professional sources, highlighting potential for further support provided to be available to patients.

What now? The need for support to change

Consideration of strategies grounded in sound behavioural theory to support GPs to provide nutrition care is a timely and important line of investigation (Ball *et al.* 2013a, 2015). A target of providing nutrition care in 4.85% of consultations with hypertensive patients presents an important and potentially considerable challenge for GPs and support staff. The target aligns with the priorities for supporting chronic-disease prevention and management by increasing the rate that brief lifestyle interventions are provided by primary health professionals (National Preventative Health Taskforce 2008). Importantly, this target accounts for only brief nutrition care provided to individual patients in consultations and does not account for secondary factors such as low socioeconomic status or low health literacy that are also associated with poor dietary behaviours. Therefore, public health nutrition interventions are still required in addition to supporting GPs to provide nutrition care.

On the basis of existing evidence, achieving the target frequency of nutrition care will (i) improve dietary behaviours of adults, (ii) reduce patient risk of developing a chronic disease (namely hypertension in this example), (iii) improve health outcomes associated with chronic disease (such as weight, glycaemic control and blood pressure) and (iv) reduce preventable hospital admissions and mortality. This target should be used by GPs, support staff, researchers and policy makers to inform future strategies in this area.

Conclusions

The importance of nutrition care to support improved dietary behaviours is well recognised. A large practice-evidence gap exists regarding the frequency that GPs provide nutrition care, which is currently estimated at 3% of consultations. Optimising the frequency of nutrition care provided by GPs has the potential to influence patient health outcomes at an individual and population level. This forecasting activity provides a conservative target frequency (4.85% of consultations) that GPs provide nutrition care to patients with hypertension so as to facilitate meaningful improvements in health outcomes related to chronic disease. Although achieving this target may present as a considerable challenge for GPs and support staff, it can be used to inform future strategies in this area so as to improve patient health outcomes.

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Fig. 1. Reach of nutrition care to patients with hypertension on the basis of frequency of provision by general practitioners. Calculations are based on data from (Britt *et al.* 2014).