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SPECIAL REPORT

TIME FOR FOOD – TRAINING PHYSIATRISTS IN NUTRITIONAL PRESCRIPTION

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***Introduction*: Sub-optimal nutrition is a leading factor in all-cause mortality, the preponderance of non-communicable chronic diseases, and various health conditions that are treated by physiatrists, such as stroke and musculoskeletal disorders. Furthermore, patients with chronic pain have a high prevalence of nutritional deficiencies, and malnutrition has been associated with limited rehabilitation outcomes in elderly patients with hospital-associated deconditioning. Thus, physiatrists may find it valuable to include nutrition in their patient services. However, discussion of nutritional counselling in the physiatry literature is rare.**

***Objective:* To inform physiatrists about including nutritional counselling as part of the treatment they provide.**

***Methods:* The paper reviews recommended communication skills, behavioural change strategies, and opportunities for inter-professional collaboration. Further resources to educate physiatrists both in nutritional prescription and in improving their own personal health behaviours are provided.**

***Conclusion:* Training physiatrists to address nutrition is a step-wise process, described here.**

Key words: nutritional counselling; medical education; behaviour change; physical medicine and rehabilitation.

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The majority of the US population does not follow Federal nutritional recommendations (1). Thus, sub-optimal nutrition is a leading factor in all-cause mortality and the preponderance of non-communicable chronic diseases (2), as well as in various health conditions that are treated by physiatrists (3–7), such as stroke (3) and various musculoskeletal disorders (4–5). Risk factors for these conditions include hypertension and obesity, respectively, which are related to nutrition and other lifestyle factors. In addition, patients with chronic pain have been noted to have a high prevalence of nutritional deficiencies (6), and malnutrition has been associated with limited rehabilitation outcomes in elderly patients with hospital-associated deconditioning (7). These findings support the importance for physiatry patients of following healthy nutritional guidelines. However, discussion of nutritional counselling in the physiatry literature is sparse.

Several barriers to healthy eating have been identified, such as a limited budget, unhealthy food preferences, underdeveloped cooking skills, and lack of understanding of dietary recommendations (8, 9). Physicians can play a vital role in helping patients to address these barriers to improving their nutritional patterns (10) and reducing their healthcare costs (11).

Recently, we published a short communication emphasizing the importance of including nutrition as a treatment for chronic conditions that impair function (12). The aim of the current paper is to advance these imperatives by providing physiatrists with a preliminary education on how to conduct nutritional counselling. In addition, the paper sets out potential next steps for physiatrists who seek to further their education in both nutritional prescribing and improving their personal health behaviours.

COMMUNICATION FOR NUTRITIONAL PRESCRIBING

Food language

Recent literature suggests that current nutritional counselling, focusing on micro- and macro-nutrients (e.g. proteins, vitamins, minerals, saturated fat, etc.), does not result in sufficient improvement in eating behaviours (13) and might also result in an unnecessary increase in consumption of supplements (14). Thus, to increase the likelihood of consuming healthier food, future nutritional messages should focus on food in the context of one's life rather than its specific nutrients (13). Examples include 30-s short messages that might be included in an encounter with a physiatrist, such as increasing consumption of vegetables to 5 servings per day or eating family meals more than 3 times a week (15).

Positive correlations exist between food preparation skills and improved dietary quality (16, 17). Positive associations have also been demonstrated between time spent preparing food and decreased mortality (18), supporting the importance of preparing meals oneself. However, a 2007–2008 survey, evaluating trends in US home-food preparation over the last 40 years (19). Thus, it is suggested that nutritional counselling should augment food-oriented education (20) with skills such as shopping, food storage, meal planning and preparation (21, 22).

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Motivational interviewing

Egger notes that nutrition, along with exercise, is the "penicillin" of lifestyle medicine, while psychology is the "syringe" through which it is delivered (23). Although various strategies for nutritional counselling have been identified, motivational interviewing warrants particular attention. Motivational interviewing is a patient-centred approach, which relies on reflective listening. It elicits behaviour change by helping individuals to explore their beliefs about health and be guided towards self-generated solutions for positive change in their behaviours (24).

Patients who have received motivational interviewing have reported higher self-efficacy related to specific eating behaviours, such as increased fruit and vegetable consumption (25, 26), and improved health outcomes, such as decreased body mass index (BMI) (26, 27). Similarly, rehabilitation programmes that have incorporated motivational interviewing have reported higher adherence to home exercise programmes, rehabilitation engagement, and better functional outcomes (28).

Frequent contact

Evidence suggests that multiple opportunities to discuss nutrition are more effective than a single counselling session (29), and that frequent subsequent contact is valuable (30). Frequent contact with individuals helps establish trust between the provider and patient, which is especially important among minority groups (31). Ongoing follow-up can be delivered by various modes, including face-to-face, telephone, email, or social media (29).

Delivery modes

In addition to direct office-based nutritional counselling, there are available educational resources that aim to improve patient adherence to nutritional guidelines. These include interactive computer modules, brochures, posters, nutritional displays, social marketing, and coupons for healthy products (32). Various professional organizations and institutions offer tools that providers can easily access and use. Two examples are Rapid Eating and Activity Assessment for Patients (REAP) and Weight, Activity, Variety and Excess (WAVE) developed by the Nutrition Academic Award (33). However, self-help approaches that provide non-individualized messages, such as brochures, without any additional personal counselling, appear to have little benefit (29). Yet, when added to individualized approaches, such as physician counselling, they demonstrate positive improvements in patients' eating behaviours (32).

Overall, a recent Cochrane review, evaluating efficacy (34), found that the use of nutritional tools was beneficial over standard care. However, it was noted that the majority of the studies reviewed reported only short-term results related to diet adherence outcomes. There is a general consensus that additional research is needed to compare long-term impact among the various tools employed in nutritional counselling.

Lay advice and support

Family members, friends, and community leaders often serve as lay health advisors. They are generally trusted, usually live nearby, speak the same language, have similar values and beliefs, and understand the cultural context of the patient. Thus, lay persons can improve the quality of messages about healthy behaviours, by tailoring messages to the specific needs and culture of the target population, especially minority groups (29). This kind of peer education and social support has been demonstrated to be effective in improving nutritional habits in a range of settings, such as in a one-on-one relationship (35, 36), and within a family (37) community (38), church (39) and worksites (40). Given this support for the value of lay advice, physiatrists can consider including family members and others in nutritional counselling discussions with patients.

BEHAVIOURAL CHANGE STRATEGIES

Physiatrists should employ evidence-based strategies to improve the nutritional status of their patients. While many different approaches have been attempted to assist patients in their efforts to adopt and maintain healthier behaviours, goal setting and self-monitoring warrant particular considerations.

Goal setting

Goal setting has been shown to be extremely important to achieving a desired behaviour change. Individuals who address specific behaviour changes are more likely to be successful than those who have ambiguous or absent goals (41). The use of goals is more successful when the outcomes are specific, proximal and realistic (42). Goals that focus on behaviours (e.g. increasing vegetable consumption) rather than on a physiological goal (e.g. lowering blood pressure or fasting glucose) are recommended. Behavioural goals are more directly under a person's control, whereas several factors (e.g. genetics) can influence physiological goals (29). Goals should be appropriately ambitious; goals that are too difficult may not be adopted, whereas those that are views as too easy may not result in increased self-

confidence once achieved. Ongoing feedback on goal attainment is important in order to foster a sense of learning and mastery (29).

Self-monitoring

A meta-analysis comparing behavioural interventions demonstrated the importance of self-monitoring while attempting to adopt healthy eating behaviours (43). When individuals self-monitor how they are meeting their goals, they develop increased awareness of physical cues and behaviours, and are more likely to identify barriers to behavioural change. In addition, self-monitoring provides direct feedback and assessment of progress (29). Self-monitoring can be simply patients using pen-and paper, or online modules (44), with or without feedback (45). Self-monitoring should be frequent, as this has been shown to be most effective (46). Furthermore, using self-monitoring together with other self-regulation techniques, such as goal setting, has an additive value in promoting healthy eating (43).

INTER-PROFESSIONAL COLLABORATION

A model of care, similar to patient-centred medical home, has been proposed for nutritional counselling, in which the physician is a coordinator of an inter-professional group rather than operating solely on a one-on-one basis (47). The physiatrist is uniquely suited to be effective in this environment, as (s)he is central to the multidisciplinary management of patients with a complex rehabilitation care (48). Hence, physiatrists could become even greater proponents of a team approach and sources of referral to other relevant healthcare professionals when needed (49, 50). In fact, Laskowski asserted that "Coordination of care and team leadership are unique skills of the physiatrist that also have the potential to be used in the battle against obesity" (48). We recommend that physiatrists consider inter-professional collaborations with nutrition professionals, culinary experts, and behavioural specialists.

Nutrition professionals

When nutritional counselling is provided by a qualified professional, such as a registered dietitian, individuals can learn how to make better nutritional choices to help improve glycaemic control, blood pressure, cholesterol, and BMI (51). Thus, nutritional education, as provided by a registered dietitian, has been shown to improve disease outcomes and reduced costs (52). Indeed, patients following a hip fracture who were allocated to receive weekly visits from a physical therapist and dietitian improved quality-adjusted life years in a cost-effective 6-month rehabilitation programme (53).

Culinary experts

Educational programmes aimed at improving a patient's culinary skills have emerged recently as a way to improve adherence to nutritional guidelines (54). These programmes augment nutritional knowledge with experiential methods, such as "hands-on" cooking sessions and bringing prepared home-food to the meeting (54). Such programmes, when delivered by a chef alone (55), or together with a dietitian, or behaviourist (56), are found to increase time spent cooking (57), and to improve healthy food consumption (58) and health outcomes (59).

Cooking interventions have also been described for patients with disabilities as well (60, 61). Adults with intellectual and developmental disabilities and their accompanying homecare staff who were referred to a basic cooking skills and nutrition programme, demonstrated increased culinary knowledge, time spent in the kitchen, and dietary changes in both patients and their caregivers (61).

Behavioural specialists

Psychologists are routinely part of rehabilitation and of other inter-professional healthcare teams (62–68), thus physiatrists can also utilize their expertise in helping patients adopt healthier eating patterns. Rehabilitation psychologists have effectively contributed to multiple programmes for disorders that invariably impact on patients' nutrition, e.g. diabetes self-management (62), weight gain in cancer patients (63), chronic pain (64–66), and depression related to disability (67, 68). In addition to providing a psychological perspective to the physiatrist and other team members, these specialists treat patients directly. Most notably, they can assess the patients' psychosocial functioning (62, 67, 68), and incorporate adjunctive interventions, such as relaxation and guided imagery (65) and cognitive restructuring (66), to help patients achieve desired goals, such as improving eating behaviours.

Nutritional change can also be empowered by working with other behavioural specialists, such as health and wellness coaches. These are professionals who facilitate positive changes in mindset and behaviour by applying principles learned from coaching psychology. Primary strategies include patient-directed goal setting, guided self-discovery, self-monitoring, and expectations of accountability (69). There is evidence that health and wellness coaching is effective in helping people with chronic disease (70) and disabilities (71) to improve health outcomes, and is feasible in a medical setting (72). Furthermore, coaching studies provide evidence that remote coaching, primarily telephonic coaching, delivers efficacy comparable to face-to-face

interventions (73, 74). Coaching can be readily introduced into a physiatrist's practice even if the clinicians themselves do not do the coaching (75). Physiatrists can collaborate with well-trained professional health or wellness coaches who can spend adequate time working one-on-one with patients toward behaviour change (75).

Recently, our group developed a new sub-specialty of coaching: the "Chef Coach" (76). These are credentialed chefs who are also trained as health and wellness coaches, combining the knowledge of a chef with the skill-set of a coach to improve patients' food choices and overall health (76). We demonstrated that a Chef Coach intervention aimed primarily at improve eating behaviours also resulted in increased interest in pursuing future goals in other health behaviours (76), such as exercise. The coaching skill-set, combined with the credentialed chef's culinary skills, might be a useful 2-pronged approach to promote healthy eating (77), and perhaps improve rehabilitation engagement, resulting in better functional outcomes.

POTENTIAL NEXT STEPS

For many physiatrists, nutritional prescription will be a new realm of practice, beyond their ordinary experience and training. Some potential next steps are described below.

Advancing your own self-care

Physiatrists help build skills, and facilitate behaviour change, but they can further help their patients (and help themselves) by also serving as positive role models. Individuals who receive counselling from providers who are in the process of improving their own behaviour are more likely to adopt the message (78). Role modelling is important, particularly related to nutrition. Providers who value the importance of a healthy diet may be more likely to encourage their patients to adopt a similar way of eating (79), and their patients are more likely to adopt it (80). Furthermore, the effectiveness of role modelling might be combined with educational tools. For example, patients who watched a video in the physician's waiting room, giving advice about diet, reported that the physician was more believable and motivating when she disclosed her own personal health practices (81).

Advancing your professional competence

In order for physiatrists to gain the knowledge necessary to develop expertise in nutritional counselling, additional education is necessary. In 2014, leaders in nutritional thinking made a call for nutritional education for healthcare professionals in order to attain translational impact on disease prevention and treatment (49). After physicians receive training in nutrition, they generally report an increase in knowledge (82), counselling (83) and improvements in patient-reported outcomes (84). It has been suggested that continuing medical education (CME) programmes can succeed in building provider skills in nutritional prescribing (82). Recommended competencies for such programmes have been described, and include leadership, knowledge, assessment skills, management skills and the use of office and community support (10).

When choosing a CME programme, consider that while online nutritional education programmes, such as Nutrition in Medicine (85) have become popular, live in-person lecture formats are still the most popular CME nutritional programmes (82). They are often preferred (85), and have equal or greater impact on physician behaviours compared with other print and online delivery systems (87). Live nutritional CME programmes vary in how nutritional content is presented: it might focus primarily on nutrition (57, 84), include nutrition as part of a complete lifestyle medicine programme (82, 88), or discuss nutrition as a component of the management of specific health conditions, such as paediatric obesity (89–92) or hypertension (93).

Interactive modules and small-group training are particularly efficacious compared with traditional didactic delivery styles (94). One recent report indicated that nutritional CME programmes, which included didactics together with "hands-on" cooking components focused on applying the nutritional message, demonstrated improvements in physician's knowledge, self-behaviour and counselling (57). Another report, which described an inter-professional lifestyle medicine training programme, demonstrated that physicians benefited most from personal lifestyle experience (95). Furthermore, Shai et al. described a training programme based on the assumption that providers have sufficient knowledge, but that they lack the capabilities of knowledge translation to the patients and the clinic as a whole (96). This inter-professional, experiential training programme, which provided communication skills and tools for health promotion, rather than simply knowledge, demonstrated improvements in both providers' and patients' nutritional intake, such as a decrease in salt and red meat consumption, and an increase in fruit and vegetable consumption (96).

CONCLUSION

Nutrition has moved from being solely a preventive modality to a treatment for chronic conditions that

impair function. Therefore, physiatrists have a duty to help their patients adapt healthier eating behaviours. Multiple resources are available to learn how to incorporate healthy nutrition into our personal and professional lives and how to empower our patients to adopt and maintain optimal nutrition behaviours.

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