New models for health improvement and behaviour change

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Executive summary

Programmes for health improvement have traditionally been focused on single behaviours, such as smoking cessation or improving people's physical activity. In recent years, however, there has been increasing interest in generic approaches to behaviour change that are transferable to a range of conditions and across a variety of patient group, including people with multiple morbidities. Two new models are considered in detail in this paper: integrative health coaching (IHC) and behavioural health consultancy (BHC). Both these models are underpinned by theories of personal health beliefs and motivation, and individual self-efficacy and capacity to change. Both have been developed and implemented primarily in the United States and Canada.

Integrative health counselling (IHC) is based in motivational methods. An important feature of IHC is that the coach steps back from an expert role and allows the client to choose what is most important to them, even if it their goal is not directly related to a health behaviour. Support services include motivational and mindfulness techniques, relaxation training, yoga, and stress management as well as the more traditional health and education coaching. In contrast to current models of behaviour change which tend to refer patients outside of the general practice team to a specialist service for a single type of behaviour, the same IHC coach works with the patient throughout to provide support and mentoring over an extended period and for a range of different needs.

IHC studies have reported positive outcomes for people with a wide range of conditions including diabetes, cardiovascular risk, chronic pain, depression, sleep problems and stress. The personalised nature of the approach and the extended period of contact with the coach appear to be major strengths. However, because participants have individualised plans, outcomes are difficult to evaluate using the usual methods and most studies have relied on self-report. Additionally, most studies have been research-based rather than implemented in routine care settings and information on how the various supportive therapies were provided is lacking.

The IHC model emphasises training of practitioners in addition to the clinical skills that they have. Training regimes differ from pragmatic short courses and online continuing education modules taking a limited number of hours to intensive post-graduate degree programmes. This is in sharp contrast to the single mode behaviour programmes, which are seldom explicit about what training, if any, has been provided.

Behavioural health coaching (BHC) shares similar aims to IHC but focuses only on people with mild to moderate mental health problems. Clinical psychologists and/or social workers are located within the primary care practice and the care is integrated with that provided by the patient's physician. The BHC intervention is designed to be brief – ideally a maximum of four to six 30 minute sessions. BHC is more directive than IHC; it focuses on rapid problem identification, with the consultant setting the agenda, and teaching and practising skills for self-management right from the start. Strategies used are similar to those in the IHC, including mindfulness, breathing and relaxation, sleep hygiene, cognitive restructuring and patient activation.

Published reports of BHC interventions have demonstrated positive results for the majority of patients. Major strengths are the location within the primary care practice, which promotes integrated care, assists uptake, and reduces stigma for patients. The small number of sessions allowed, however, has been found to limit the satisfactory treatment of some patients and there have been a range of logistical constraints with space and record sharing.

The IHC and BHC models, although featuring key differences, have considerable overlap in the motivational, patient activation and mindfulness methods they use which appear to suit a wide variety of patients and conditions. Their overall findings would seem to support taking a generic approach to health improvement interventions, rather than referring people to separate services. Patients benefit from the individually tailored approach and the personal relationship with a supportive coach; practitioners develop

the skills to support and mentor people with a range of conditions; and organisations gain from pooling resources instead of running a suite of separate services, each with its own needs. Additional benefits appear to be realised if the model can also be situated in the primary care practice, as happens with BHC.

While these are all positive features for any health service, behaviour change is a difficult area and one where success is difficult to measure. Both IHC and BHC are still relatively untested, particularly over the long term, and there are unknown factors about each one which would need to be investigated if considering trialling either. Additionally there are important issues underpinning any health service to be considered, including the population which would be targeted, the availability of a suitable workforce, funding, the suitability for the New Zealand situation, particularly Māori and Pacific populations, and the effect on current services.

These cautions are significant, but the fresh direction of these approaches to behavioural issues is welcome. They demonstrate a new way forward which is likely to be well received and may replace the more directive and siloed approaches that have largely been the default option until recently.

Background

There is an extensive literature on interventions for behaviour change for health improvement. Interventions to promote health in areas such as smoking cessation, good nutrition, exercise, depression, compliance with medication and self-care practices for chronic disease and others are well documented (Benzo et al., 2013; Dellasega et al., 2012; Elley et al., 2007; Lai et al., 2010; Pack et al., 2013; Roy-Byrne et al., 2009; Sinclair & Hamlin, 2007; Smedslund et al., 2011). There have been systematic reviews and meta-analyses of randomized trials, and even systematic reviews of systematic reviews in most of these areas. The studies that demonstrate effectiveness have common themes, particularly the importance that regular feedback and follow up from a provider or counsellor can make in enhancing the effectiveness of an intervention (Austin et al., 2013; Elley et al., 2007; McNaughton, 2009; Rees et al., 2013; Sinclair & Hamlin, 2007). Similarly, many studies have reported that time pressure on general practitioners inhibits raising behavioural issues with their patients and referring them to the available services (Elley et al., 2003; Gribben et al., 2000; Patel et al., 2011). Generally, however, studies are confined to one type of intervention - smoking alone or increasing activity levels alone - rather than looking at promoting behaviour change in a more generic way. Green Prescription, Appetite for Life, Brief Intervention Counselling (BIC) for mild to moderate anxiety and depression are all examples of this type of single behaviour change programme.

Generic skills approaches to supporting behaviour change, in contrast, are transferable across a wider range of patient groups. Examples of this approach are integrative health coaching (IHC), and behavioural health consultancy (BHC). IHC has been used across a range of different areas of behaviour change as well as across multiple areas in the same individual; BHC is restricted to patients with mental health issues but also addresses associated physical problems such as obesity if they are contributing to psychological distress. The approaches have in common that they use patient-centred motivational methods which work on what is meaningful to the patient rather than direct them into programmes that they are not interested in and therefore not likely to persist with. Integrative Health Coaching is underpinned by theoretical approaches including the Health Beliefs Model, Social Cognitive Theory, the Theory of Planned Behaviour, Self Determination Theory, Self-Perception Theory and Motivational Enhancement (Wolever et al., 2013). Behavioural Health Consultation is relatively well defined and its development and underpinning philosophy have been well described by Robinson and Strosahl (2009).[1] Both IHC and BHC draw on motivational methods but are less well known than motivation interviewing itself, which is widely documented, including in New Zealand (see Appendix 1). Each of these models are discussed in detail in the sections below, outlining how they work, what has been reported about their strengths and limitations, and the lessons learnt from their implementation elsewhere. A brief conclusion notes issues that would need to be thought through if adapting either of these approaches for implementation in a local context.

Integrative Health Coaching

Health coaching is a generic behaviour change approach that can be applied to a wide range of conditions. It focuses on the patient/client as an active participant in the interaction, helping them to identify what is preventing behaviour change, and teaches strategies that "…empower [them] to achieve and maintain improved health status" (Dennis et al., 2013, p.382). Health coaching studies vary considerably as to how closely they follow this ideal. Different approaches are reported in the literature in relation to the role of the coach, the amount of autonomy handed to the patient compared to the direction provided by the coach, and the eventual goals which are the focus of change. In some studies, the health coach directs and mentors

[1] Navigation models including the Partnership Community Worker programme as well as care coordination services are not discussed here. While they are also examples of generic services, they emphasise negotiating access to health and social services but without the focus on behaviour change.

the patient towards a pre-defined outcome chosen by "experts" (for example, reduction in blood pressure in hypertension or HbA1c in diabetes) (Dube et al., 2015; Willard-Grace et al., 2015). The coach provides self-management support, navigational support of clinical and community resources, medication reconciliation and other support that helps address barriers to health improvement. Health coaches maintain continuity of care with patients between medical visits, provide a link between the patient and their medical provider, and may accompany patients to medical visits and work with them on developing action plans for change (Dube et al., 2015).

Integrative Health Coaching (IHC) is a less medically focused and more patient-directed model where patients are encouraged to identify their own priorities for change – whether strictly health-related or not – and work towards them with the help of a dedicated coach. Duke University in the United States has been particularly prominent in the field of integrative health coaching and has documented their programme, its philosophy and theoretical foundations in the published literature (Smith et al., 2013; Wolever, Caldwell, et al., 2011; Wolever et al., 2013).

In the ideal form of IHC, the coach deliberately stands aside from any health professional role such as administering vaccines or checking blood pressures for the same patient as this is considered to undermine the patient-centred nature of IHC and put the coach back in the position of an "expert" rather than a partner (Caldwell et al 2013). IHC therefore does not necessarily focus on any symptoms or diagnosis or around a particular condition (for example, diabetes, hypertension), behaviour (smoking, exercise, nutrition) or outcome (HbA1c, BMI, or medication compliance). Instead, IHC coaches ask their patients/clients what is important to them and focuses on their values, sense of purpose and vision for the future (Caldwell et al., 2011). The IHC model of behaviour change is based on the belief that individuals have, or can be encouraged, to find the inner resources to meet their goals and while they may need may need support or guidance, they do not need experts to tell them how to fix their problems (Wolever, Caldwell, et al., 2011). They do, however, need to be motivated and prepared to give the time and commitment that is required for success.

Unlike psychotherapy, executive coaching and life coaching, the coach is not the one providing education, clarification and insight to solve a problem or reach a goal but guides the clients with careful questioning so that they reach insights for themselves (Caldwell et al 2011, p. 32-33). The techniques used are built on the belief that "… people have innate wisdom, strength and creativity that, when skilfully recruited, will guide them to health more efficiently than will external advice" (Smith et al 2013, p. 69). The coach seeks to maintain forward momentum but frequently refer back to a "patient's deeply held values and overall sense of purpose" (p. 70).

The diagram used by the Duke centre to depict the model shows the patient in the centre of a circle, surrounded by three concentric outer layers; the second ring shows the patient surrounded by "mindful awareness"; in the third ring are seven categories of self-care (physical environment, nutrition, exercise and rest, mind-body connection, spirituality, social interactions, and personal and professional development); and in the outside ring are conventional and complementary approaches to prevention and intervention (Smith et al 2013, p. 69).

Other similar programmes to the Duke model are offered by the University of Minnesota Integrative Health and Wellbeing Coaching Program[2], and the National Institute of Whole Health & Bark Coaching Institute in Massachusetts.[3] All three programmes share similar philosophies, emphasising integrative and holistic health, the use of mindfulness, and the mind/body/spirit connection. Interprofessional education and the need to break down silos and disciplinary boundaries are also important in all three.

[2] Situated within the University's Center for Spirituality and Healing. See: https://www.csh.umn.edu/education/focus-areas/health-coaching

[3] See: http://www.wholehealtheducation.com/

Simmons and Wolever (2013) have noted the strong similarities between motivational interviewing and integrative health coaching. IHC however, goes considerably further; whereas a motivational interviewing intervention is more likely to develop a plan for change and then simply refer the patient onwards for a particular intervention (smoking cessation, physical activity etc), IHC takes a more holistic approach supporting patients through the whole process of change related to a range of behaviours with regular contacts from the same coach to revise goals and overcome barriers along the way.

Implementing and evaluating integrative health coaching

The design and outcomes of five studies by the Duke and Minnesota groups over the past decade are presented to illustrate how IHC has been implemented in a range of settings. In the first example, 154 patients with known cardiovascular risk factors were randomised to an IHC intervention or to a control group who received usual care (Edelman et al., 2006). Intervention patients chose which behaviours they would prioritise for changing and developed an implementation plan with their coaches which they worked on over 10 months using strategies such as mindfulness meditation, relaxation training, stress management, motivational techniques and health and education coaching. The primary outcome measure for the intervention as a whole was 10 year risk of coronary heart disease. Over the 10 months of the trial, the intervention group had a statistically significantly greater decrease in risk compared to the usual care group (9.3% to 7.8% vs 11.1% to 9.8%) and the Framingham Risk Score improved more compared with baseline for subjects in the intervention arm than the usual care arm ($p=0.04$). The intervention subjects were also found to have significantly increased days of exercise per week (3.7 vs 2.4, $p=0.02$) compared with those in the usual care arm. While these results were promising, the authors acknowledged that the study had a range of limitations; the subjects were primarily female, educated, and had incomes above the median; the clinical heterogeneity of the subjects meant that the study had insufficient statistical power to measure clinically relevant effects on individual risk factors; the time frame for the follow up was shorter than the investigators would have preferred; and the drop-out rate of the intervention group was almost double that of the controls (21/77 compared to 11/77). The authors also noted the improvements in the control arm suggested that the entire study sample may have been well motivated to make health improvements and the intervention may be less successful with a less engaged population. Not addressed by the authors was the 1.8 difference in risk score at baseline between the two groups, suggesting that the groups may have been different to start with. Also not mentioned, was whether the reduction of 1.5 points in the intervention group (less than the difference between the two groups at baseline) compared to the 1.3 in the usual care group, even though assessed as being statistically significant, had any clinical significance.

A subsequent study from the Duke team (Wolever et al., 2010) randomised 56 patients with Type 2 diabetes either to six months of IHC coaching or usual care. Coaching was by telephone for fourteen 30 minute sessions over the six months, with baseline and follow up face-to-face visits for assessments to assess medication adherence, exercise frequency, patient engagement, HbA1C and psychosocial variables. Coaching followed the same methods as described above, focusing on patient-prioritised goals. Validated instruments including the SF36 and others were used as outcome measures. Forty nine participants completed the study; 27 of the 30 in the intervention and 22 of the 26 in the control group. Intervention participants' improvements compared to baseline in almost all measures (including HbA1C) were assessed as statistically significant; control participants improved only marginally or not at all compared to baseline and none was statistically significant. Strengths of the study compared to that by Edelman et al (2006) were the larger proportion of patients with low socio-economic status, the inclusion of more than 50% of participants who were African Americans, the relatively low drop-out rate, and the high adherence to the study protocol, with 93% of study completers having all 14 of the coaching sessions. The authors noted, however, that these positive outcomes also had several limitations: the small number of participants, the reliance for most measures on self-report, and the fact that only a third of the intervention group had elevated A1C at baseline.

A further study from the Duke group (Wolever, Webber, et al., 2011) assessed the effectiveness of IHC on modifiable disease risk, patient readiness to change, and psychosocial risk factors for stroke, diabetes, and coronary heart disease. Participants were 63 adults (33 men and 30 women aged between 33 to 73 years). The study started with a three day health immersion at the Center for Integrative Medicine where participants could choose from conventional and complementary therapies including nutritional counselling, acupuncture, massage, exercise training, yoga and mind-body therapy (mindfulness, preventive medicine, relationships, personal growth, spirituality). Participants also met with health coaches to reflect on their values and goals, so that at the end of the three days all had developed an individualised plan for lifestyle changes. Following the immersion phase, participants were given telephone support and guidance by the IHC practitioners to carry out and sustain their health plan. Five sessions of 30-40 minutes were available over the following approximately eight months and one telephone session with the participant's integrative physician. Outcome was assessed using disease risk calculations, a range of self-reported psychosocial measures for mood, stress, exercise habits, relationship satisfaction, confidence, and readiness to change, as well as standard biological measures such as blood pressure fasting glucose, lipid profile, BMI, and C-reactive protein.

Results at the end of the study showed statistically significant reductions in five year median modifiable risk of diabetes and stroke compared to baseline and a non-significant decline in modifiable CHD risk. Participants experienced statistically significant improvements in all psychosocial outcomes except exercise stage of change. BMI, waist circumference and pulse rate all improved significantly during the study period and absolute risk of stroke also decreased significantly to 1.06% compared to 1.28% at baseline ($p=.02$). Other biomarkers either did not change, or in the case of total cholesterol, actually increased significantly. The study had a good retention rate with more than 90% of participants completing the study. Moreover, the completers used only half the coaching time, suggesting that the same results could be achieved with less intensive support than had been provided. While these results, with the exception of cholesterol, were encouraging, the authors noted that the participants, when matched for gender and age with a national sample, had a median relative risk at baseline that was well below the national average for stroke, diabetes or CVD. Additionally, they were all relatively healthy adults, predominantly white, and had a level of income and education above the median, and because they were self-selected, may have been more motivated to change health behaviours.

Since these earlier studies, the Duke IHC model has evolved and been extended into areas such as chronic pain, depression, sleep problems and stress. The Bravenet multicentre study (Abrams et al., 2013) included 409 patients from nine integrative medicine clinics throughout the United States with pain that had persisted for three months at an intensity of at least 4 on a 10 point scale. IHC modalities offered over the 24 weeks of the study were similar to those offered by Wolever et al (2011), and as with the previous studies, coaches developed individualised treatment plans based on patient priorities rather than a standardised treatment protocol for all participants. Baseline and three follow up assessments at 6, 12 and 24 weeks were conducted using validated scales to measure pain, impairment, quality of life, fatigue, sleep, and sense of control. Blood tests for inflammation markers such as C-reactive protein were also conducted at weeks 6 and 12. Two hundred and fifty two of the participants (62%) completed all three follow up assessments. There was no significant difference in baseline status between the completers and the non-completers, but non-completers tended to have pain of longer duration (about nine years) than non-completers (seven years). Results, which were reported for completers only, showed statistically significant decreases in pain scores in both severity (from moderate to mild) and interference with normal daily life from a mean of 4.6 at baseline to 3.3 at week 24. The study was limited by the early loss to follow up of over a third of participants, and the lack of a control group meant that there could be no certainty that natural improvements and/or the increased attention the participants received were not responsible for the results. The authors drew attention to the difficulty of measuring overall outcome without a standardised treatment protocol and the challenge that it posed for a holistic model such as theirs:

> *…funding agencies are accustomed to a more reductionist approach to assessing which individual component of a multimodality intervention is the active one. … [This] convention runs*

counter to the philosophy of integrative medicine personalized intervention based on the individual's assessment which places the needs of the unique person first and designs an appropriate personalized intervention (Abrams et al 2013, p.8).

In a more recent RCT from the Duke group (Miller et al., 2014; Miller et al., 2012), 52 patients with type 2 diabetes received either a mindfulness based eating intervention or a self-management Smart Choices intervention over three months. Standard randomisation procedures were used so that the two groups were very much the same at baseline. The Smart Choices intervention was similar to other programmes for diabetes health and nutrition education; the mindfulness intervention had an emphasis on mindfulness meditation, cultivation of "inner wisdom" in relation to eating, and basic information on diet, physical activity, and glycemic control, but no specific diet or activity choices. In the section of the study that looked at anthropometric and clinical outcomes (Miller et al., 2012), both groups had significant improvements compared to baseline in BMI, waist circumference, HbA1c, glucose and insulin. The only significant difference between groups was in waist circumference where the Smart Choices group had a mean reduction of -4.71cm compared to the mindfulness group mean reduction of -2.48cm. ($p=0.0523$). In the second report of the study (Miller et al., 2014) the two groups both had similar significant improvements in almost all outcomes (depressive symptoms, anxiety, weight change, energy consumption, outcome expectations, and control over eating). The only significant difference between the groups was that the mindfulness group improved significantly in mindfulness, and the self-management group had a greater increase in nutrition knowledge and self-efficacy as well as fruit and vegetable consumption. The authors noted a number of limitations from the study; the study participants were predominantly white, and 24% of participants withdrew from the study, primarily because of competing time commitments. Nevertheless, the study's conclusion that both interventions were effective treatments and the availability of mindful eating gives both patients and clinicians greater choice may be justified particularly if, as the authors suggest, the results could be confirmed in a larger study.

The Duke Centre for Integrative Medicine in conjunction with other similar centres across the United States has also carried out a wide range of studies focusing on mindfulness based stress reduction (MBSR) for a range of conditions. These studies have respectively investigated MBSR for: chronic pain (Rosenzweig et al., 2010), sleep quality (Caldwell et al., 2011), depression (Greeson et al., 2015), workplace stress reduction (Wolever, Caldwell, et al., 2011), clinical symptoms and depression in chronic heart failure (Sullivan et al., 2009) and aspects of diabetes self-management (Rosenzweig et al., 2007). All studies featured an emphasis on mindfulness and meditation, sometimes as an adjunct to standard therapy, as a way of reducing stress, anxiety, anger, pain, and depression, and increasing coping skills. Several of the studies had comparison groups; a tai chi study (Caldwell et al., 2011) was of students enrolled in an elective university course who were compared with students enrolled in a recreation course; in the study by Sullivan et al (2009) the MBSR participants were compared to a control group with no intervention. All others were a before-and after-design, comparing participant outcomes at the end of the study against baseline. Though each of these studies showed encouraging results, they did have considerable limitations; most were relatively small, they largely relied on self-reported measures, and participants were self-selected into the particular intervention they received so that the comparison groups were relatively different at baseline. There has also been interest from these groups in Tibetan integrative medicine (Cameron, 2012) but publications have been descriptive only rather than reports of interventions.

The University of Minnesota Center for Spirituality and Healing, in a different approach to patient recruitment, carried out a collaborative study with a non-profit health plan in the United States Midwest (Lawson et al., 2013). An opt-in health coaching programme was developed for high risk members of the health plan, with the intention of moving away from a directive disease-centred management approach to focus on wellness, and a more collaborative, self-directed method. From the total membership of over a million members of the health plan, 114 615 members were identified as high risk and therefore eligible for the health coaching. Of these, 6940 actively participated in the programme and full quality of life data were collected on 1082. To ensure consistent and skilled health coaches were available to work with those who chose to participate, thirty individuals with degree level qualifications in nursing, psychology, social work,

exercise physiology, nutrition education and/or health education were employed and trained using a customised 200 hour programme developed by the Minnesota group. The programme ran according to IHC principles, with the patients and their coach working out a plan according to patient priorities. Coaching was done by telephone and each participant was guided in developing skills to establish a collaborative relationship with their primary care provider. The most commonly selected goals were general quality of life, nutrition/weight management, and exercise. While uptake of the programme was disappointingly low (<7% of eligible patients), 93% of those who did enrol identified three or more goals and 89% of these met at least one goal over six months. Participants reported improvements in stress, motivation, confidence to make changes, and improved engagement and exercise behaviour. A disappointing finding was that nine percent of participants recorded a decline in patient activation measures[4] following coaching. The authors suggested the explanation for this negative result may be that the coaching had resulted in increased client self-awareness and therefore a more honest assessment of their behaviour. They noted the disappointingly low uptake, which they believed was likely to be partly due to lack of understanding about what was offered, but were encouraged that those with more significant disease were most likely to choose to participate. They also commented that their study (believed the intervention to be the first of its kind), in spite of its acknowledged limitations, had helped inform larger prospective studies for the future which would enable establishing the optimum time and duration of coaching and other important variables that would be likely to contribute to success in primary care.

Costs of this study were examined in a separate report (Yonk et al., 2015). Claims data were analysed for 1161 participants for whom there was at least six months data before the first health coaching session and six months after the last. These were matched on a one-to-one basis with a control group of health plan members who would have been eligible to participate in the coaching but had not done so. Among the intervention participants, the number with inpatient costs fell from 20.3% in the six months prior to the coaching to 11.5% in the six months following the coaching, and emergency department visits fell from 24.5% to 17.1%; prescriptions filled fell from 1.78 pre-coaching to 1.63 per person post-coaching. There were no significant changes in the control group over the same time period. Financial modelling estimated that the intervention had resulted in an average monthly outpatient and total costs savings of $286 and $412 per person respectively compared to controls. However, because the participants were self-selected, the possibility that they were a group with high motivation to improve their health and that this had contributed to the cost saving could not be ruled out. The study found that if implementation costs are modest and below the amount saved per month per person in a coaching programme, then health coaching is a viable and attractive intervention for health plans.

A somewhat more pragmatic approach in a routine care setting was reported in a study by Willard Grace et al (2015). Participants were patients with uncontrolled Type 2 diabetes, hypertension or hyperlipidemia who attended one of two community health centres serving low income people in San Francisco and were assigned to a health coach or usual care over the course of one year. The health coaches were three medical assistants who received an extra 40 hours training. The coaching was more directive, with outcomes set in advance and based on glycemic, cholesterol, and blood pressure measurements, medication adherence and patient satisfaction. Health coaching was also more medically focused than the Duke studies, focusing on self-management support, navigational support of clinical and community resources, medication reconciliation and other patient-centred support. There were 224 patients assigned to the intervention arm and 217 to usual care, with three health coaches. The coaches assumed greater responsibility for chronic care management, met with patients before and after the medical visit, stayed in the room during the consultation with the primary care physician, identified priorities and created personal action plans. Results showed that patients in the health coaching group were statistically significantly more likely to achieve at least one of the principal goals (p=0.02) as well as all of their clinical goals (p=0.05);

[4] These are not further described in the article but appear to relate to self-efficacy and behaviour change, particularly with regard to the amount of exercise undertaken. Because patient activation was introduced part way through the intervention results were available for only a subset of participants (n=570).

twice the proportion of participants in the coaching arm as in the usual care group achieved the HbA1c goal of 8.0% or lower (p=0.01). An interesting finding was the significant difference in outcomes between the two clinic sites. This was attributed to the one coach at the second site having been absent for two months, having fewer patient contacts, and being a less suitable cultural fit with the participants. The overall conclusion from this study was that medical assistant coaching was well received by clinicians and patients and had the potential to improve chronic disease management even in a climate where there was a shortage of primary care physicians but that new funding models were needed if there was to be wider implementation in primary care. The authors did not comment on the caseload for the three health coaches, which seemed heavy for the number of patients (224) and the amount of contact that the coach was expected to make with each person.

Another paper from this study examined clinician perspectives on working with the health coaches (Dube et al., 2015). Fifteen of the seventeen clinicians (both physicians and nurse practitioners) completed surveys for 61% of eligible patient visits (269/441 visits) and thirteen were interviewed individually. Clinicians rated visits with the patients assigned to health coaching as less demanding than with patients assigned to usual care, and were more satisfied with the medical encounter. The clinicians commented on the personal connection that the coaches made with the patients, the extra time that had been freed up to deal with medical problems at the patient visit, and the bridge that the health coach provided in facilitating communication between the patient and provider about the care plan and how to take medications. Other major advantages were that they helped the patients navigate the health system and were a contact person to answer questions between visits. Clinicians found that there was some extra time commitment in communicating with health coaches between visits, but the time was offset by having more time during the patient visit and the greater benefit in patient outcomes. Overall, none of the clinicians could recall any instance when health coaching detracted from patient care. The authors noted that the lack of blinding of the study was a limitation, and that it was unclear how health coaches would work in a routine environment outside the extra resources provided in a research study.

While studies from the United States dominate the literature on health coaching, there are a number of other useful reports. An Australian rapid review of telephone coaching for people with chronic conditions (Dennis et al., 2013) examined 40 papers reporting 30 separate interventions.[5] The definition of health coaching was close to that of the Duke group, in that it was not directed at any particular condition, it focused on the patient as an active participant in the interaction and the approach was of helping to "… identify impediments to behaviour change, and methods of teaching and modelling that empower the patient to achieve and maintain improved health status" (Dennis et al., 2013, p.382). The review distinguished between planned/scripted approaches and those that were reactive and more geared towards monitoring and self-management of more advanced disease. Both approaches were found to have advantages; planned or scripted interventions were more useful for motivating and educating people with less advanced disease, and were more able to help them progress over time; the unscripted approach appeared to be more flexible, more effective for vulnerable groups who often had worse control over their illness at baseline and therefore showed greater improvements compared to those who had better control at the start of an intervention. Only one study in this review included patients with multiple morbidities and there was no indication of the skills and training of those who provided the coaching. Additionally, the impact of coaching on health service use was unclear, with a suggestion that it may in fact increase, rather than reduce the cost of care, if it resulted in more frequent patient testing because of the monitoring by assiduous health coaches and the withdrawal of patients because of the frequent phone calls they received. The review concluded that telephone coaching is likely to improve the management of chronic disease, especially for vulnerable groups. However, it needs to be targeted to the level of risk and morbidity in the patient group, and it is still unclear which models are the most effective.

[5] The reviewers noted that no study targeted indigenous populations in Australia, the US, or Canada.

While most studies reported measures of patient engagement and quality of life using some form of validated scale, only one small study that directly spoke to participants was located for this review (Liddy et al., 2015). In this study health professionals from three primary care clinics in the Ottawa area were offered eleven hours of training in health coaching techniques. Primary care providers identified patients at risk of or diagnosed with diabetes, whom they perceived would benefit from health coaching. Patients were eligible for six months of coaching, with sessions being up to one hour and communication being a mix of face-to-face, telephone, email depending on what suited the coach and patient. The six coaches were also encouraged to attend patients' primary care appointments where possible. Forty-six patients participated in the programme, 40 completed it, and 11 were interviewed in detail about their experiences. All patients reported positive experiences related to better awareness of the way their eating and exercise patterns affected their health, and recognised that they needed to play an active role if their health was to be successfully managed and improved. They appreciated the flexibility of the coaches being readily available at different times and by different methods, their expertise in answering questions and facilitating access to care within their primary care teams. The low drop-out rate and the reported comments of the participants were positive, however, the study had small numbers and the overall level of qualitative analysis appeared superficial. Additionally, while promising reductions in HbA1c, cholesterol levels and blood pressure were recorded for approximately a third of patients, baseline and end-point data on these outcomes were not available for many of those who completed the full six months, with no explanation being offered as to why.

Strengths of health coaching models

The studies above demonstrate a range of approaches which have reported modest success in trial and observational designs. While the studies have considerable differences, they do have two key features in common. Firstly, they move away from interventions to change single behaviours to a more diverse group of people, many of whom are likely to have multiple morbidities. Moreover, it seems that the same approach can be effective outside the usual areas considered for behaviour change (smoking, diet, exercise) and work well for people with depression, chronic pain or illness to improve their quality of life and help them better manage their illness. Secondly, they have a much stronger focus overall on letting patients prioritise and set the goals that they want to work towards. The degree of patient vs expert balance varies between studies, ranging from health coaches who deliberately step back from any expert role, to those who provide motivation, mentoring and support but also continue in a more directive health professional role to conduct testing of biometric data.

The support offered in the reported studies varied considerably, ranging from more standard health education for nutrition and exercise, motivational techniques and stress management, to less widely used techniques such as mindfulness meditation, relaxation training, yoga, massage, and what were described as "healing touch" and "energy" therapies (Abrams et al., 2013, p.2). In many of the studies patients were not directed into any particular therapy but could choose several from what was offered. This element of choice, however, clearly provided a greater challenge to measuring effectiveness.

One of the greatest strengths of all the health coaching studies appears to be the personal nature of the mentoring by the same health coach over an extended period of time. This allows programmes to be flexible, accommodate individual needs for more or less contact with the coach, and to suit people with a range of conditions and priorities. It also seemed to provide the individual with ongoing encouragement and uncritical support to keep them moving towards the goal that they had chosen. The finding in one study the health centre where the health coach was absent for a long period and had fewer contacts with each patient had worse outcomes than the health centre where the health coaches were stable and a better fit with participants (Willard-Grace et al., 2015) also supports the critical role of the coach.

Another reported strength of health coaching was the ability for the health coach to provide a bridge between the individual and their primary care provider where this was put in place. Coaches might attend

appointments with the individual so as to provide more informed support of ongoing treatment or action plans, or contact the provider directly if, for example, medication needed to be changed. Reaction of primary care providers, where reported, was generally favourable. In the only study that focused on providers, all were largely positive about the benefits of dedicated health coaches, particularly in reducing the time that they needed to spend with patients with chronic disease.

Limitations of the health coaching literature

In spite of the overall positive nature of the studies on health coaching, even those studies with strong research designs had a variety of limitations. Comparison groups were often different at baseline, patients received different types of intervention during the study, there were high drop-out rates in some studies, and statistically significant outcomes appeared to be of potentially questionable clinical significance in others. It is hard to see how this could be avoided, as the very nature of the health coaching interventions makes outcomes challenging to measure quantitatively. Studies were either reduced to measuring biometric data (e.g. blood pressure, HbA1C, or BMI), in effect going against the spirit of health coaching where the patient not the investigators should select their goal, or needed to rely on self-reported outcomes such as scales for reduced pain and stress and improved quality of life.

Many of the studies reported were carried out by or in collaboration with university groups, and nearly all had participants who had self-selected to take part. Participants were therefore likely to be more motivated, making it difficult to assess how effective the health coaching model would be across less motivated populations in a routine care setting without additional research resources. The research nature of the studies also suggests the provision of extra funding and expertise for setting up the intervention, training the staff and carrying out the evaluation, resources which would not be available for implementation in a routine care setting. The studies were also time limited, so that long term patient outcomes and the sustainability of health coaching if offered in a routine primary care setting remain unknown.

A major gap in the literature is the minimal coverage of patient experiences with health coaching. Apart from the small study by Liddy et al (2015), no other study was located which had asked participants directly about their experiences. The high drop-out rate in a number of the reported studies and the lack of discussion as to why this might have been also suggests patient experience is a neglected area. Dennis et al (2013) drew attention in their review to a diabetes health coaching study done in the UK where 8.2% of patients left the intervention arm because they “could not cope with the number of telephone calls”. They went on to note that evidence for patient satisfaction and improved quality of life was lacking. These comments do not necessarily mean that patients were dissatisfied, but they underline the fact that patient experience has not been a priority as yet.

Several other gaps in the reporting of studies are disappointing; the relevant information must have been known but, possibly owing to the restrictions imposed by the journal article format, they have not been reported. One key issue in this category relates to how many individuals one coach should ideally mentor at the same time. None of the studies addressed this point directly and the information on the ratio of coaches to patients varies considerably between studies. The study by Wolever et al (2010), for example, assigned 30 patients between two qualified IHC coaches, an average workload of 15 per coach over the 14 week period of the study. In contrast, Willard Grace et al (2015), reported 224 patients in the health coaching arm were divided between three health coaches with each patient being in the study for a year. This appears to be a heavy work load (up to 75 patients per coach), even given that the study ran over a period from 2011-2013 so that not all participants would have been in the study at the same time. Even more confusing are the numbers reported by Lawson et al (2013) that 30 health coaches were trained to work with the 6940 health plan subscribers who actively participated during the two years of the study. At first sight this appears to be a workload of over 200 patients per coach, however, as completion data were available only for 1082 participants, it is clear that many did not make use of the full range of coaching

available. At the other end of the scale, in the small pilot study in Canada (Liddy et al., 2015), six coaches were available for 46 patients (fewer than eight each). Clearly the ratio of coaches to patients is a critical factor for a successful intervention, along with the local context, the needs of the targeted patient group, and the logistic and financial resources available yet no study discussed how the ratio was arrived at.

Also relevant to staffing a health coaching intervention, is the vacuum of information in the studies on how the various supportive therapies were managed. Ideally, coaches step back from taking on an "expert" role, and anyway would be unlikely to have all skills in the full range of therapies offered. It is unclear how nutrition and exercise counselling, massage, yoga, meditation and so on were accessed; were they provided internally by relevant personnel taken on for the purpose or referred to external organisations who contracted with the coaching group? Did the coach organise referrals and accompany the patient or were patients given a list of providers and left to organise attendance themselves? The answers to these questions have practical and resource implications and would need to be clarified before considering undertaking a health coaching intervention.

Finally, a surprising omission from the discussion in the literature is any comment on the personal "fit" between the coach and patient. Health coaching relies on establishing a close rapport between the coach/patient dyad, so that the consistent, supportive relationship maintains patient motivation. The rich variety of human personalities suggests that a mismatch must sometimes happen but there was no indication in any of the studies about how this would be handled. Only one study noted that the long absence of a coach and a less successful cultural fit with participants affected results from one of the two health centres involved in the intervention (Willard-Grace et al., 2015) but did not offer any further comment on the issue.

Skills and training for health coaching

In the wider literature on behavioural interventions, there has been general lack of detail on the professional skills or training that were considered necessary for the practitioners delivering the intervention. A wide variety of health professionals are mentioned as delivering interventions, including nurses, dieticians, psychologists, social workers, counsellors, exercise coaches and medical assistants, or there may be no information given about the professional role of the practitioner. Seldom is there any information provided about what, if any, additional skills or training over and above their core professional expertise that they received. Reports refer to the practitioners as trained exercise specialists (Elley et al., 2003; Kerse et al., 2005) or trained counsellors (Kealey et al., 2009; Winters et al., 2014) without any further detail or comment. There appears to have been an assumption that those with relevant content expertise will intuitively also be able to build rapport with patients and have the interpersonal skills necessary to motivate and encourage them in behavioural change. Moreover, in many studies the intervention has been carried out by researchers rather than a routine practitioner to whom the patient would present in usual care, an important distinction as pointed by Kaner et al (2009).

This issue is one which the motivational and integrative health coaching literature addresses in some detail by focusing on skills for motivating behaviour change that health professionals need to have in addition to their clinical training and expertise. MI training methods for practitioners are well documented (Miller & Rollnick, 2002; Rollnick et al., 1997; Rollnick & Heather, 1992) and have been further developed in a briefer form for use in time-limited consultations and flexible enough to be used with people in various stages of readiness to change. Training of practitioners in brief motivational interviewing takes around 12-15 hours, teaches interviewers to raise the subject of behaviour change in a sensitive and respectful manner, and has a set of concrete strategies to assist practitioners (Lane et al., 2008; Rollnick et al., 1997; Rollnick & Heather,

1992; Spanou et al., 2010). MI training is starting to be offered in primary care settings in New Zealand but is still relatively new.[6]

Training for IHC has varied from the intensive degree programmes offered by the Duke and Minnesota groups available only to those who already had qualifications and expertise in a health or allied health field, to more pragmatic short course training in health organisations such as the Veterans Health study or the 40-hour extra training given to health assistants reported in the San Francisco study (Willard-Grace et al., 2015). In relation to the extent and duration of training, it is pertinent to note the problems reported by the Duke group to ensure health coaching positions were graded at a high enough level on the university salary scale to reflect the long training that they had done and ensure adequate remuneration. Because of the emphasis on formal training for practitioners, a number of university[7] and private organisations[8] in the United States now offer training and certification programmes in generic health coaching. Both the Duke University Integrative Medicine group and the University of Minnesota Center for Spirituality and Healing offer health coaching training programmes ranging from online modules for continuing education credit through to Masters level degrees. Lectures and presentations are available online. There is also a National Consortium for Credentialing Health and Wellness Coaches[9], both on an individual and organisational basis. This body has recently (October 2015) published transitional national training and education standards for health and wellness coaching (Jordan et al., 2015). Its website lists more than 20 accredited organisations that offer approved courses throughout the United States.

A systematic review of the literature on health and wellbeing coaching by Wolever et al (2013) covered the background and training that the practitioners had received. The majority were health professionals of some kind, including, physicians, nurses, pharmacists, and physician assistants. Also prominent were allied health professionals such as dieticians, psychologists, exercise specialists, occupational therapists, social workers, and qualified counsellors. Less often were they health promoters, students training in a range of health and allied health subjects, and those described simply as “professional coaches” in lifestyle, health and wellness. The duration and intensity of training reported by the studies in this systematic review varied widely, from just a few hours at the least intensive end of the range to around 600 hours at the other. Only around half the articles examined for the systematic review reported the type of training that was given. In those that did, it included training in behaviour change methods based on theoretical approaches such as goal setting, action planning, problem solving, overcoming barriers, self-monitoring and building self-efficacy. Other areas were covered were communication skills, motivational techniques, cognitive behavioural skills, content education in healthy lifestyles, nutrition, physical activity skills and disease specific information. Practical training in clinic flow, placing referrals and navigating the health system also featured.

The Duke University training course and its development has also been detailed in an article by Smith et al (2013). Certification is a two stage process; an initial foundation course, consisting of over 100 hours of onsite and distance education in coaching techniques and practice sessions over about four months. The advanced course includes a six month coaching skills development program, 100 documented hours of coaching, one to one supervision of recorded sessions, a mindfulness-based stress reduction course, and written and oral examinations. To enter the programme, participants require at least a bachelor’s degree or higher in in a medical or allied health field, and there is a preference that coaches have some clinical background because health coaching often deals individuals in complicated and vulnerable states, whether

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[6] See for example, http://anzasw.nz/events/motivational-interviewing-training/ for links to an NZQA approved course.

[7] Duke University, Durham, S.C See https://www.dukeintegrativemedicine.org/integrative-health-coach-training/ and University of Minnesota Masters of Arts degree in Integrative Health and Wellbeing Coaching https://www.csh.umn.edu/education/master-arts-degree-integrative-health-and-wellbeing-coaching

[8] For example, the Bark Coaching Institute in California http://wisdomofthewhole.com/about-us/ and the National Institute of Whole Health (Wellesley Center, Massachusetts) http://www.wholehealtheducation.com/

[9] See: http://www.ncchwc.org/

mentally or physically. Back-up from physicians and therapists to whom they can refer patients/clients when necessary is also recommended. The articles from the Duke centre make it clear that establishing the ideal amount of training was a difficult process, and a particular barrier was convincing human resources personnel that the health coach position was skilled and complex and must be rated at a high level (Smith et al., 2013; Wolever et al., 2013).

The Duke centre offers integrative health coaching adapted for training within organisations. In a reported example, training was offered to providers and staff in Veterans Health Affairs Medical Facilities as part of the VHA's efforts to promote patient-centred care (Collins et al., 2015). The course took the form of two 3-day modules five weeks apart. Between the two modules, the 253 participants completed three 90-minute practice coaching sessions either in person or by telephone where trainees alternated roles as patient, coach, and observer. The participants were a wide variety of health and allied health professionals; over 50% were either nurses or social workers, with physicians, dietitians, psychologists, physical and occupational therapists also being represented. Most had volunteered to take part, however 15% participated because a manager required them to do so. The ultimate aim of the training was to prepare participants for health coaching, increase their self-efficacy and intention to use health coaching in their usual work, and achieve an attitude change in relation to patient-centred care. Pre-and post-test measures were used to assess these outcomes. Results showed gains in preparedness and self-efficacy and there were some gains in use of health coaching skills at follow up, but initial gains in attitudes to patient centred care were not sustained. An unexpected finding was that participants' perceptions of how supportive their workplaces were of health coaching actually decreased after the study, suggesting that further efforts were needed to create a supportive organisational culture for a greater shift in attitudes towards patient centred care.

This results of this study demonstrated some of the issues that may occur in relation to implementation of IHC in natural settings. Although training was done according to the Duke principles, the participants were then expected to incorporate their newly developed skills into their normal duties, mixing the expert and mentor roles so that it would not have been possible to separate out the health coaching role from that of the "expert", as recommended (Caldwell et al., 2013). The outcomes from this study suggest that too much was expected of these participants and that there were conflicting principles within the organisation that had organised the training. It does not appear surprising that the intervention had very limited success, although this was not openly addressed by the authors.

Behavioural health consultant (BHC) model

Sharing similar aims to IHC but with key differences in the approach, the behavioural health consultant model (Alberta Health Services, 2012; Bryan, C. J. et al., 2012; Robinson & Strosahl, 2009) focuses on people with mild to moderate mental health problems. Behavioural health consultants work in family practice settings, collaborating with family physicians:

> *…in the early detection and treatment of health and mental concerns including chronic pain, occupational stress, chronic illness, anxiety, depression and substance abuse with the goal of a quick problem resolution, long term prevention and general wellness (Alberta Health Services, 2012).*

The BHC model originated to address concerns about the recognition and treatment of behavioural health issues in primary care. These included the insufficient consultation times available to primary care providers to deal with complex mental and social issues, physicians' lack of training in the field, fragmentation of services to which such patients could be referred and the low rate of uptake of referrals even if one was made. The origins and development of the BHC model, the mistakes made and lessons learned as it was implemented are well documented (Robinson & Strosahl, 2009). Major features of the BHC model are its

co-location in the primary care practice so that an immediate referral can be made from a primary care physicians, and the integrated nature of the care where the primary are provider remains involved throughout. An important difference in the approach compared to MI and IHC, is that patients without mental health issues are not eligible. The BHC intervention is designed to be brief; consultants see between eight and twelve patients a day for no more than 30 minutes each and patients average only four to six sessions in total, in other words, "a highly condensed behavioural protocol that [can] be disseminated in a non-research setting"(Robinson & Strosahl, 2009, p.60). The model focuses on rapid problem identification with active involvement by the clinician and the patient in training for self- management. Because of the time constraints, BHC is directive, setting the agenda, teaching and practising skills in the session, and assigning practice homework right from the start (Bryan, C. et al., 2012). Evaluation of BHC, however, has presented challenges, owing to the "…paucity of instruments capable of simultaneously measuring health status, psychological health and social health" (Robinson & Strosahl, 2009, p.69).

There are, however, some studies examining effectiveness. Two studies from the same investigators (Bryan, C. J. et al., 2012; Bryan et al., 2009) examined the outcomes of implementing BHC in family medicine clinics at Air Force hospitals in the United States. The earlier study in 2009, with 338 patients was for one location in the southwestern United States; the later study (495 patients) covered two clinics one each in the southwestern and one in the south eastern United States. Patients included active and retired military personnel and family members who were referred for a wide variety of psychological and psychosocial problems. Behavioural health consultants were either clinical psychologists, clinical psychology interns or social workers. This was a naturalistic study of patients who were attending the clinics for routine consultations with a primary care provider. Cognitive behavioural interventions such as mindfulness, breathing and relaxation strategies, sleep hygiene, cognitive restructuring and behavioural activation were used. Patients were offered four appointments, however, in the second study, a small number of patients saw the BHC five or six times.

The Behavioral Health Measure (BHM) was used at each attendance to measure patient change over the period that they were attending the service. The BHM consists of three questions assessing subjective distress and life satisfaction; 13 assessing symptoms such as depression and anxiety; four assessing life functioning, and a global mental health index based on the average score of all 20 items. In the earlier study patients who had attended two or three appointments had clinically meaningful improvements in all outcome measures. Outcomes were not as positive for those who attended four appointments (N=8). These patients, who generally had higher levels of distress were believed to potentially indicate a subgroup of patients for whom the brief intervention was not sufficient. In the later study, 71.5% of the patients who attended two or more sessions demonstrated some form of improvement with 40.5% demonstrating reliable improvement; 17.8% showed no change and 10.8% some form of deterioration. A feature of both these studies was that outcome measures were available only for those patients who attended two or more appointments, because a comparison with the first appointment was needed to obtain any measurement. In the earlier study only a third of the patients attended more than once, meaning that there was no outcome measure for the other two thirds, 134 of whom were considered to be minimally distressed and did not need to return, and 80 "no shows". The second study had a much higher return rate for patients (340/495, 69%) but disappointingly, did not report on the same breakdown in numbers for this group with no outcome data. The authors concluded that rapid gains can be made in symptomatic distress early in treatment, even for patients with more severe initial presentations when seen in this way within the context of their own primary care practice and in collaboration with their primary care provider. They noted limitations as being that formal psychiatric assessment and diagnosis was not feasible, medication use was not tracked, and there was no comparison group.

The Alberta Health Care project

The BHC model was adopted in the Calgary area primary health care system as a variation of the Shared Mental Health Care program and was evaluated between April 2010 and October 2011 (Alberta Health Services, 2012). At the time of the evaluation, between 60-70% of the physicians in the Calgary area had access to a co-located BHC at least once a week.[10]

The objectives of the Alberta evaluation were to document:

- who was accessing the BHC program, how often and within what time frame
- the experiences of patients, PCPs and BHCs in the program
- whether the program was associated with positive patient, provider, and systems level outcomes (Alberta Health Services, 2012, p.14)

The evaluation period covered the year 1 April 2010-31 March 2011, during which time 25 BHCs were employed who worked with 471 physicians in 161 clinics in the area. They conducted 21,161 visits with 10,296 unique patients, more than half of whom (55%) used the service only once. Ninety three percent of patients had four or fewer consultations. The most common presenting problem was depression followed by anxiety and relationship problems, but many patients had more than one problem. To measure outcomes, patients completed the DUKE Health Profile[11] and the healthy Days Core Module (HRQOL-4)[12] prior to receiving any intervention (time 1) and again at 8 and 16 weeks follow up (times 2 and 3). The difference between the patient scores at each time was used to measure patient outcomes. Patient experience surveys were also completed. Complete patient data were available for 133 patients at time one; 162 at time two; and 117 at time three. Thirteen in-depth interviews with BHCs and 12 with primary care physicians were also conducted as part of the evaluation, as well as 162 brief patient interviews.

The results showed that overall patient scores significantly improved between time 1 and 2 on all the Duke subscales except the disability measure, and improvements were maintained at time 3. Scores did not return to pre-treatment levels even where follow up did not take place until 16 weeks following treatment. The HRQOL-4 results also indicated a significant decline over time in patients' physically or mentally unwell days and activity limited days. The 162 patient satisfaction surveys that were completed demonstrated a high degree of overall satisfaction with the programme. Almost all patients agreed or strongly agreed that they found the service satisfactory; were involved as much as they wanted to be in decisions about their care; received information that helped them manage their problem independently; and would recommend the service to others. Even the question with the lowest satisfaction scores (whether the service had been a good fit for their problem), still had 80% of respondents who agreed or strongly agreed that it had.

The overall finding of the evaluation was that the program had a positive impact and had reinforced the evidence for integrating effective and appropriate short term approaches to mental health care in primary care settings. The analysis of the interview data showed that the co-location of the service in the family practice clinic was considered to be a major advantage for everyone involved. It promoted easy inter-professional collaboration for the BHCs and the primary care providers and eased the workload for physicians. The physicians considered it provided a service which patients could access easily and without

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[10] There were some additional features of the Alberta program: immediate "warm hand offs" were available from GP to BHC and a consultant psychiatrist attended the practice once a month to advise the GPs/BHCs.

[11] DUKE is a 17 item self-report instrument that measures physical health, mental health, social health, general health, self-esteem, and perceived health subscales. It is available in the public domain, see http://healthmeasures.mc.duke.edu/images/DukeForm.pdf

[12] HRQOL-4 is a validated tool where respondents are asked to rate the number of days in the past 30 that they experienced poor physical and/or mental health, and how many days this affected their ability to engage in their usual activities. See https://www.cdc.gov/mentalhealth/data_stats/pdf/brfss_healthy_days_hrqol-4_questions.pdf

stigma, and without which many would "*fall through the cracks*" (Alberta Health Services, 2012, p.31). Patients also commented that they greatly valued the low cost and the fact that their own doctor was involved with the team and had not referred them to someone they did not know in another service. Both physicians and the BHCs believed that the speedy access prevented underlying mental health issues for patients escalating to the point where they needed emergency treatment. They reported that the BHC model had reduced referrals to external psychiatric services as well as providing a bridging service for those who had been referred but were waiting weeks or months to be seen. Physician satisfaction overall was high with one calling it *"…probably the single most fantastic addition we have had to our type of practice forever*" (Alberta Health Services, 2012, p.39). No effect was seen on the number of patients accessing emergency department visits or on in-patient admissions.

There were, however, some less positive comments, particularly in regard to the limited number of sessions permitted. Physicians and BHCs reported that some patients could not be satisfactorily treated in the time allowed; patients, having built up a rapport with the BHC were reluctant to be referred to longer term therapy elsewhere with someone they did not know. One BHC was cited as saying that when people wanted to carry on, being told there were no more sessions had a negative impact on their condition "… *for some people I just continue seeing them and I know I'm not supposed to, and for some I try to draw the line any*way" (Alberta Health Services, 2012, p.40). Logistical issues had also created problems; there were issues with clinic space (BHCs having to work in a kitchen or other unsuitable spaces) and, in some practices, BHCs were not given access to patient records. The name of the program was unhelpful, particularly the word "behaviour"; physicians found it difficult to explain the program to patients, who tended to interpret it as indicating that they had done something wrong or were behaving badly.

These barriers were addressed in the discussion section of the evaluation. The authors noted that the program was never meant to meet the needs of all patient with mental health issues, but also described the concerns about the short number of sessions as being a "*perceived misalignment*" (Alberta Health Services, 2012, p.45). They drew attention to measures of flexibility that were available. They confirmed that infrastructure issues and the confusion about the name of the program needed to be addressed. They suggested that the lack of impact on emergency and in-patient services was likely to be because of the relatively small sample size coupled with the relatively low base rate of acute care utilisation in the general population. They recommended that the model should continue to be delivered in primary care settings, with more resources allocated for increased BHC time and better infrastructure to support increased interaction and collaboration with primary care teams. They also recommended that there should be more education of patients and physicians about the benefits of the short term program for the majority and the degree of flexibility available. They suggested that future research should be directed at developing methods for economic analysis, for assessing societal benefits and cost savings and investigating which presenting problems were the most responsive to BHC intervention. They noted the lack of a control group and the short follow up period were limitations of the evaluation and raised the possibility of a future randomised trial with a longer follow up being conducted.

Although the BHC program clearly had positive results for most patients, and filled a gap where no service had existed before, several limitations not addressed by the authors were apparent. Firstly, the failure of the evaluation objectives to define what constituted a "positive system outcome" (Alberta Health Services, 2012, p.14) leading to the selection of acute data (in-patient and emergency utilisation) as a measure which was ultimately found not to be useful. Of more significance for the model itself were the concerns about the shortness of the program, reported as a key barrier by all categories of respondents, but which appeared to be downplayed in the evaluation as being wrongly perceived, and were only addressed in the recommendations by the suggestion that a better understanding of the model should be promoted. The question of how to address the needs of those patients who were not helped was not raised. Secondly, the almost exclusive privileging of physician viewpoints in the analysis of the qualitative data appeared unbalanced. From the data generated in 162 patient interviews, 13 with BHCs and 12 with physicians, 27 excerpts were used to illustrate points the authors wished to make, and of these 24 were from physicians, three from patients and one from a BHC. These limitations raise the question of whether some less positive

results were found but were not included for fear of compromising the overall positive nature of the evaluation.

Discussion and comparison of the IHC and BHC models

The IHC and BHC models came about in quite separate ways and were originally directed at patient groups with different health needs. However, as they have become more established, a considerable overlap has developed between the two models and the kind of patients that can be helped. The IHC model had its origins in addressing lifestyle behaviours that affect physical health but has gone on to extend into areas such as chronic pain and mental distress (Greeson et al., 2015; Rosenzweig et al., 2010), whereas the BHC model, grounded in mental distress, also finds that it inevitably also needs to address associated chronic pain and illness, interpersonal conflicts and unhealthy lifestyles (Bryan, C. et al., 2012). The extent of the cross-over should not be surprising; the effectiveness of mindfulness approaches for physical symptoms is becoming more and more established (Cherkin et al., 2016; Goyal & Haythornthwaite, 2016; Susman, 2001). Table 2 shows the features of each model alongside each other, and a comparison of the main features of the strengths and weaknesses is discussed below.

Table 2: Comparison of the IHC and BHC models

	Description	Purpose/focus	Setting	Duration	Practitioners	Skills	Techniques	Evidence
Behavioural health consultation (BHC)	Patients with psychological or psychosocial distress referred by primary care provider to BHC services within general practice. Robinson & Strosahl (2009) describes origins and development from mid 1990s onwards.	Focus on mental distress but extending to associated lifestyle, pain, chronic disease, relationship issues. Not intended for severely distressed patients.	Routine care setting. Key feature is co-location within GP practice; BHC is known to PHC and collaborates with patient's provider face-to-face	Brief and prescriptive; highly condensed protocol; four sessions of no more than 30 minutes over several months. Occasional extension for a small minority of patients only.	Limited to clinical psychologists, clinical psychology interns, social workers	Cognitive behavioural therapy approach;	Mindfulness, relaxation, breathing techniques; patient activation plans and "homework"	Positive outcomes from observational studies in routine primary care settings; (US air force personnel and families; Veterans Admin facilities; Alberta Health trial.
Integrative health coaching (IHC)	Opt in usually through recruiting via a range of research based groups or services associated with university hospitals University research teams (Duke, University of Minnesota). Origins in early 2000s; Key authors: Wolever, et al (2011; 2013); Simmons & Wolver (2013).	Began with obesity/inactivity but now extended to pain, depression , anxiety as further research has shown the model is applicable to a wider range of conditions	Various: may be primary care based; may work with patients in their own homes or through email/phone as preferred by patient. Variable frequency y over the allowable period; some contact with PC team	Approx 6 months Patient encouraged to set priorities and work towards their own goals even if not specifically "health" related	Wide range of qualified health and allied health practitioners who must have received additional training in IHC methods	Motivational interviewing; navigating health systems; Heavy emphasis on training in building rapport with patients; Stand back from "expert" role – provide support and active listening	Relaxation, mindfulness, exercise, tai chi, coping skills, meditation, patient activation.	Mostly research studies to date; some RCTs, observational studies, a few studies in routine settings with large HMOs or Veterans Affairs facilities

Health coaching would seem a rational approach both for patients and organisations, with its flexibility and patient-centredness being particular strengths. For organisations, the basic principle of pooling resources to address a wide range of behaviours appears at the very least to be more efficient than having separate providers and interventions for smoking cessation, nutrition, exercise promotion, and mild to moderate mental health problems. Similarly, developing generic skills for health coaches to motivate and support people also seems a wise use of staff training and skills. Advantages for patients, especially those with multiple morbidities, include having a single point of contact, having a flexible plan that suits their own circumstances, and being paired with a non-judgemental mentor who will develop a rapport with them and support them over an extended period. IHC also appears to be useful for a wide range of patient groups, however the lack of studies in routine care settings as yet has to be considered a disadvantage. There are also a number of uncertainties about the ideal duration and intensity of the patient/coach contact, and the number of individuals whom one coach can mentor at one time. Additionally, the extent of training that health coaches need has varied widely between studies. It is not clear whether a degree course with hundreds of hours is essential as the Duke programme suggests (Wolever et al., 2013), or whether a shorter course for lower level health assistants could be just as effective (Willard-Grace et al., 2015). Or it may be that the model is flexible enough to be expanded or contracted according to the resources available and the patient group targeted, though this is as yet unknown. Another issue not dealt with in any of the IHC studies is how the adjunct training and support packages (for example, exercise, yoga, mindfulness/relaxation training etc.) are funded and provided if the coach is acting purely as a non-expert mentor.

Behavioural health consultancy also seems a promising way to address mental health problems and to deal with associated physical health concerns at the same time. A major strength is that it eases rather than adds to the primary care physician's workload, without referring the patient to an external provider and while still maintaining continuity of care with the primary care physician. The need for the GP time has been a stumbling block in other behavioural interventions (Gribben et al., 2000; Patel et al., 2011), so to have overcome this barrier (although clearly requiring extra resources) is something of a breakthrough. Additionally, the model does not have to be adapted from research studies but has been specifically developed and implemented in routine primary care settings. While the prescriptive approach is quite different from the IHC emphasis on motivating the patient to make decisions, it may well suit people who are struggling with depression and anxiety and need a more structured programme. The restricted appointment times and number of sessions available, however, does seem to limit the range of patients who could be treated effectively, and people without mental distress and purely physical problems are excluded so that it lacks the wide applicability of the IHC approach. The narrow range of highly qualified practitioners who can be BHCs according to this model also raises the question of generalisability to other settings if a suitable workforce is not readily available.

In relation to this last point, it is relevant to highlight a recent British trial which randomised 440 people with major depressive disorder either to a behavioural activation administered by junior mental health workers or cognitive behavioural therapy delivered by psychological therapists (Richards et al., 2016).[13] The practitioners in this trial, both the mental health workers and the psychological therapists, were already employed by the NHS in the relevant role. They all received additional training relevant to their role in the trial, underwent competency assessment, and had fortnightly clinical supervision throughout the trial period. They delivered maximum of twenty 60 minute sessions over 16 weeks. This study concluded that the lower level intervention was no less effective than the comparative intervention (CBT) and that "effective psychological therapy for depression can be delivered without the need for costly and highly trained professionals" (Richards et al., 2016, p.871). This result is interesting in the light of the BHC model with more highly skilled (and more costly) professionals but the amount of contact time with the patients contrasts with the much briefer nature of the four 30 minutes sessions that the BHC uses. It may be that there is a trade-off between severity of illness, level of practitioner expertise, and amount of contact time needed for

[13] Note that this study was purely an intervention for major depression and did not appear to address other health or relationship issues in the same way that they IHC and BHC was able to.

an intervention. However, the combination of these three factors would seem difficult to determine and may be different for each individual.

Conclusion

Behaviour change is well documented to be a difficult area for health improvement and one where outcomes are difficult to measure. The studies of both IHC and BHC interventions commented on the difficulty of measuring success, and information about their long term outcomes is limited, with even the longest follow up being only a few months. IHC in particular, given the non-prescriptive and variable nature of the intervention between patients presents particular challenges in evaluating results. It is therefore hard to draw any firm conclusions about the extent to which the effectiveness of either of these models has been established.

If considering trialling either of these approaches, there would be a number of additional considerations outside those that are already highlighted above, but which are important underpinnings for the introduction of any new programme.[14] These include, but are not limited to:

- How would the implementation of either an IHC or BHC model fit with or be adapted to current behavioural change services operating such as the Green Prescription, or Brief Intervention Counselling for depression and anxiety?
- What population or sub-population would be targeted?
- Would there be an available workforce, particularly for the BHC model which consisted of practitioners who were clinical psychologists or social workers?
- How and where would an IHC workforce receive training and what level of training would be appropriate?
- How would the service be adapted for Māori and Pacific populations? All the literature reviewed indicates an individualistic approach which does not integrate well with a whānau ora model.
- Practical considerations of space and sharing of patient records if practitioners are located in primary care practices – these were identified as barriers in the Alberta study.
- Where would the funding and resourcing come from and would that be in addition to or instead of existing services?

Leaving all these potential barriers aside, it is clear that both the IHC and BHC models have demonstrated positive short term results for a considerable number of patients. The fresh direction that these approaches take to behavioural issues is welcome. They demonstrate a new way forward which is likely to be well received rather than the more directive and siloed approaches that have largely been the default option until recently. Moreover, the way they are able to address a range of issues bothering the one individual would seem to be a more logical approach both for the person concerned and for the organisation, than referring the them to a range of different and unconnected services.

[14] See Cook, L. Design and components of a health service. [Internal document]

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Appendix

MI is a client/patient-centred counselling style for motivating behaviour change by helping patients explore and resolve ambivalence about adopting healthy behaviour (Miller & Rollnick, 2002). It is grounded in the basic principle that people must have a strong desire within themselves to change before any progress can be made. MI practitioners use a partnership approach, avoid denying or challenging resistance, and support the self-efficacy of the individual to take action and progress towards change. The MI the counsellor needs to step back from their role as an "expert". The basic principles are that counsellor should be empathetic by putting themselves in the client's place; support the self-efficacy of the client to carry out actions that move towards change; avoid denying or challenging resistance; and encourage the client to see a discrepancy between where they are now and where they want to be. Interventions are not imposed in a standardised way, but tailored to the client's individual circumstances. Motivational interviewing is well documented in the international literature with numerous studies and systematic reviews (Barnes & Ivezaj, 2015; Cheng et al., 2015; Cushing et al., 2014; Lindson-Hawley et al., 2015). It has also been the focus of attention in New Zealand (Britt & Blampied, 2010; Krishnamurthi et al., 2014; Taylor et al., 2010) and the subject of recent academic theses (Austin, 2012; Brinson, 2014; Dawson, 2014; de Bruin, 2015; Obald, 2015).

Brief motivational interviewing is a form of MI adapted for used in time limited consultations in primary care (Lane et al., 2008; Rollnick et al., 1997; Rollnick & Heather, 1992; Spanou et al., 2010). It has been implemented in areas such as smoking cessation, exercise, nutrition, addictions, as well as for promoting self-care and adherence to treatment in depression, respiratory disease, diabetes, and cardiovascular disease and other chronic conditions, with most studies reporting positive results. Brief MI was featured in detail in an Occasional Paper for Pegasus Health on behavioural interventions in primary care (Bidwell, 2014) and training courses for primary care professionals have been implemented.