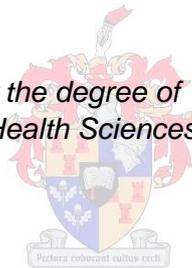


The development, implementation and evaluation of a training intervention for primary health care providers on brief behaviour change counselling, and assessment of the provider's competency in delivering this counselling intervention.

by

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Declaration

By submitting this dissertation electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

This dissertation includes two original papers published in peer reviewed journals and two unpublished publications that were accepted for publication. The development and writing of the papers (published and unpublished) were the principal responsibility of myself and, for each of the cases where this is not the case, a declaration is included in the dissertation indicating the nature and extent of the contributions of co-authors.

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Abstract

Unhealthy behaviour is a key modifiable factor that underlies much of the South African (SA) burden of disease and primary care morbidity. Chronic diseases such as heart disease, type 2 diabetes, lung diseases and some cancers are linked to underlying behavioural issues such as tobacco smoking, alcohol abuse, physical inactivity and unhealthy eating.

Evidence shows that brief behaviour change counselling by primary care providers can be effective in helping patients to change risky lifestyle behaviours. However, the capacity of South African primary care providers to educate and counsel patients on lifestyle modification is generally poor. The need for primary care provider training in lifestyle counselling, is stated as a critical objective in 're-orientating' the primary health care system to effectively address NCDs in the National Strategic Plan for the Prevention and Control of NCDs and their risk factors in SA.

The overall aim of this research was to develop, implement and evaluate the effectiveness of a training intervention for primary care providers in the South African setting, which is based on teaching best practice, behaviour change counselling (BBCC) methods that can be used for patients with risky lifestyle behaviours associated with non-communicable diseases (NCDs).

"Effectiveness" relates to the effect of the training on PCPs adoption of a patient centred approach, and skills acquisition after the training, and not the effectiveness in changing, or improving patient outcomes.

The sequence of the abstracts of the four articles that were published from this research, gives an overview of the process.

The abstracts of the four articles presented for the degree are given here.

Abstract: Article 1

Title

A situational analysis of current training for behaviour change counselling amongst primary care providers in the Western Cape, South Africa.

Background

The risk factors (smoking, alcohol abuse, physical inactivity and unhealthy diet) associated with non-communicable diseases (NCDs) have been confirmed internationally, and locally. Primary health care providers can play an important role in counselling patients. The need for health care provider training in evidence-based lifestyle interventions has been acknowledged by the National Department of Health in their strategic plan for NCDs. Local studies to assess practitioners' capacity to counsel, suggest that it is inadequate. This may be a reflection of a lack of training in counselling skills.

Aim

A situational analysis of the current training courses for primary health care providers in the Western Cape.

Setting

Key informant interviews were conducted with the two programme managers involved in the training of clinical nurse practitioners at Stellenbosch University, as well as three programme managers and a family physician involved with the training of registrars in Family Medicine at Stellenbosch and Cape Town Universities.

Focus group interviews were conducted with nine nurses working at a primary care clinic, situated in the Cape Winelands, and with a group of eight registrars in family medicine at the University of Cape Town.

Methods

This was a qualitative study that used both individual in-depth, and focus group interviews. Interviews were transcribed verbatim and analysed using Atlas.ti software and the framework method.

Results

Current training for practitioners in the Western Cape is not sufficient to achieve competence in counselling.

Conclusion

Revising the approach to current training is necessary to improve primary care providers' counselling skills.

Abstract: Article 2

Title

Development of a training programme for primary care providers to counsel patients with risky lifestyle behaviours in South Africa

Objective

This study aimed to re-design the current training for primary care providers (PCPs) in South Africa, around a new model for brief behaviour change counselling (BBCC) that would offer a standardised approach to addressing patients' risky lifestyle behaviours associated with non-communicable diseases (NCDs).

Methods

The educational team consisted of the researcher and two supervisors who had expertise in medical education and had previously used the ADDIE model. The ADDIE model provided a systematic approach to the Analysis of learning needs, the Design and Development of the training programme, its Implementation and initial Evaluation. The situational analysis described in Article 1 provided information for the Analysis step, whilst this article reports on the other steps in the ADDIE process.

Results

This study designed a new approach to BBCC, which was based on a conceptual model that combined the 5 As (ask, alert, assess, assist and arrange) with a guiding style derived from motivational interviewing. The 8 hour training programme was developed, for either clinical nurse practitioners or primary care doctors.

Conclusion

To our knowledge, this training programme is the first attempt at developing and implementing best practice BBCC training in our context, targeting a variety of PCPs, and addressing risk factors for NCDs.

Practice implications

Family physicians from Departments of Family Medicine throughout South Africa were trained as trainers. These trainers are now training medical students, general practitioners and family physicians in their respective areas. The authors have also presented the training programme in other countries such as Botswana and Namibia.

Abstract: Article 3

Title

Evaluation of a training programme on the competency of primary care providers to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa

Objective

To evaluate the effect on clinical practice of training primary care providers(PCPs) in an approach to brief behaviour change counselling (BBCC), which integrates the 5 As (ask, alert, assess, assist, arrange) with a guiding style derived from motivational interviewing in the South African context. BBCC was focused on the four risky behaviours (unhealthy eating, tobacco smoking, physical inactivity, harmful alcohol use) for non-communicable diseases.

Methods

A before-and-after design, recorded BBCC skills at baseline, directly after training and finally 6-weeks later. Announced standardised patients were used at baseline and immediately after training while an unannounced standardised patient was used in the person's clinical practice at six weeks. The standardised patients consulted the trained participants as part of their normal patient load. We evaluated each recording for adherence to the guiding style and delivery of the 5 As using the Motivational Interviewing Treatment Integrity tool (Version 3.1.1), and a tool based on the 5 As training design. Analysis was performed in Statistica version 12 (Statsoft 2014) with the help of the Centre for Statistical Consultation, Stellenbosch University.

Results

123 recordings of counselling with standardised patients were collected from 41 PCPs. Results showed a significant improvement in adoption of the guiding style (e.g. global score at baseline 2.0 (2.0-2.6) and in clinical practice 3.0 (2.7-3.3) $P < 0.001$) and completion of the 5 A steps (e.g. assist score at baseline 1.26 (1.12-1.4) and in clinical practice 1.75 (1.61-1.89) $p < 0.001$).

Conclusion

Training PCPs in this approach to BBCC is effective at changing their clinical practice in the short term. Further research is needed to evaluate the effect on patient outcomes.

Practice implications

Given the lack of clear approaches to BBCC currently the training programme could be integrated into the curricula of PCPs, and used in continuing professional development.

Abstract: Article 4

Title

Qualitative evaluation of primary care providers experiences of a training programme to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa

Background

The global epidemic of non-communicable disease (NCDs) has been linked with four modifiable risky lifestyle behaviours, namely smoking, unhealthy diet, physical inactivity and harmful alcohol use. Primary care providers (PCPs) can play an important role in changing patient's risky behaviours. It is recommended that PCPs provide individual brief behaviour change counselling (BBCC) as part of everyday primary care. This study is part of a larger project that re-designed the current training for PCPs in South Africa, to offer a standardized approach to BBCC based on the 5 As and a guiding style. This article reports on a qualitative sub-study, which explored whether the training intervention changed PCPs perception of their ability to offer BBCC, whether they believed that the new approach could overcome the barriers to implementation in clinical practice and be

sustained, and their recommendations on future training and integration of BBCC into curricula and clinical practice.

Methods

This was a qualitative study that used verbal feedback from participants at the beginning and end of the training course, as well as twelve individual in-depth interviews with participants once they had returned to their clinical practice. The researcher familiarised herself with the data collected during the training, by reading the field notes and newsprint and identifying the key ideas and grouping them into themes. Interviews were transcribed verbatim and the transcripts were checked and corrected prior to analysis using Atlas-ti software [v.6.2.12 2011] and the framework method.

Results

Although PCP's confidence in counselling improved, and some thought that time constraints could be overcome, they still reported that understaffing, lack of support from within the facility and poor continuity of care were barriers to counselling. The current organisational culture was not congruent with the patient-centred guiding style of BBCC. Training should be incorporated into undergraduate curricula of PCPs for both nurses and doctors, to ensure that skills are embedded from the start. Existing PCPs should be offered training as part of continued professional development programmes.

Conclusions

This study showed that although training changed PCPs perception of their ability to offer BBCC, and increased their confidence to overcome certain barriers to implementation, significant barriers remained. It is clear that to incorporate BBCC into everyday care, not only training, but also a whole systems approach is needed, that involves the patient, provider, and service organisation at different levels.

Opsomming

Ongesonde lewenstyl kan gekoppel word aan die meeste chroniese siektes wereldwyd, en dra grootliks by tot die las van primere sorg morbiditeit, asook in Suid Afrika. Rook, ongesonde dieet, fisiese onaktiwiteit, en alkohol misbruik word beskou as die onderliggende risiko faktore wat verantwoordelik is vir die ontwikkeling van kardiovaskulere siektes, tipe 2 diabetes, respiratoriese siektes, sowel as sommige kankers.

Navorsing het bewys dat primere gesondheidsorg werkers effektief kan wees om pasiente te help om hierdie gewoontes te bekamp. Nieteenstaande hierdie bewyse, is die huidige kapasiteit van primere sorg dokters en verpleegsters in Suid Afrika nie voldoende om sodanige diens te verskaf nie. In die Nasionale Strategiese Plan vir die beheer van chroniese siektes, word opleiding vir primere gesondheidsorg werkers geprioritiseer as 'n kritiese uitkomst vir die beheer van chroniese siektes, en die onderliggende risiko faktore. Dit is dus duidelik dat daar 'n behoefte is om sodanige opleidingprogramme te ontwikkel.

Die doel van hierdie navorsing was om 'n bewysgebaseerde opleidingsprogram te ontwikkel, te implementeer, en die effektiwiteit daarvan te evalueer in ons unieke primere gesondheidsorg sisteem in Suid Afrika. Die opleidingsprogram moes ontwikkel word, vir beide primere sorg dokters en verpleegsters, sodat dit hulle in staat kan stel om pasiente te beraad oor enige van die vier risiko faktore.

Opsomming: Artikel 1

Titel

Analise van die huidige opleidingprogramme van primêre gesondheidsorg werkers rakende kort gedragsverandering berading in die Wes-Kaap, Suid Afrika.

Agtergrond

Internasionale en plaaslike navorsing het bewys dat nie-oordraagbare siektes verband hou met vier onderliggende risiko gewoontes, naamlik tabak rook, fisiese onaktiwiteit, ongesonde dieet en alkohol misbruik. Primêre gesondheidsorg werkers kan 'n belangrike rol speel om pasiente te beraad aangaande hierdie ongesonde gewoontes. Die Departement van Gesondheid se Strategiese plan vir die beheer van nie-oordraagbare siektes prioritiseer sodanige opleiding vir primêre gesondheidsorg werkers. Plaaslike navorsing dui daarop dat primêre gesondheidsorg werkers se kapasiteit om te beraad tans onvoldoende is. 'n Gebrek aan opleiding kan moontlik bydra tot die huidige situasie.

Doel

Die doel was om die huidige opleidingsprogramme vir primêre gesondheidsorg werkers in die Wes Kaap te analiseer.

Omgewing

Sleutel informant onderhoude is gevoer met twee program bestuurders wat verantwoordelik is vir die opleiding van kliniese verpleegpraktisyne aan die Universiteit van Stellenbosch, drie huisartskunde program bestuurders, en 'n huisarts wat almal betrokke is in die opleiding van dokters in Huisartskunde aan die Universiteite van Kaapstad en Stellenbosch.

Fokus groep onderhoude is gevoer met 'n groep van nege verpleegsters, verbonde aan 'n primêre gesondheidsorg kliniek in die Kaap Wynland Distrik, asook 'n groep van agt dokters wat kliniese assistente is in huisartskunde aan die Universiteit van Kaapstad.

Metodes

Hierdie was 'n kwalitatiewe studie wat gebruik gemaak het van individuele in-diepte onderhoude, sowel as fokus groep onderhoude.

Resultate

Huidige opleidingprogramme vir primêre gesondheidsorg werkers is nie voldoende om hulle bevoegdheid in berading te verseker nie.

Opsomming: Artikel 2

Titel

Ontwikkeling van 'n opleidingsprogram vir primêre gesondheidsorg werkers in Suid Afrika om pasiente te beraad oor ongesonde leefstyle.

Doel

Die doel van hierdie studie was om die huidige opleidingprogramme vir kort gedragsverandering berading te verbeter, om primêre gesondheidsorg werkers op te lei om 'n nuwe gestandaardiseerde benadering te gebruik, wanneer hulle pasiente met die vier riskante lewensstyle beraad.

Metodes

Die ADDIE model is gebruik om 'n gestruktureerde sistematiese benadering te verseker. Die stappe wat gevolg is, was die analise van leerbehoefte, die ontwerp en ontwikkeling van die nuwe program, die implementasie daarvan en laastens die evaluering van die program.

Resultate

Hierdie studie het 'n nuwe opleidingsprogram vir kort gedragsverandering berading ontwikkel wat gebaseer is op 'n geïntegreerde model van twee teorieë. Die program kombineer die 5 As (vra, adviseer, evalueer, assisteer en opvolg) met die leidende styl van motiverende onderhoudvoering. Die program is ontwikkel as 'n agt ure opleidingprogram vir beide primêre sorg dokters, asook kliniese verpleegster praktisyne.

Gevolgtrekking

Sover ons kennis strek is hierdie die eerste sodanige opleidingsprogram wat ontwikkel is in ons konteks, en wat deur verskillende primêre gesondheidsorg werkers gebruik kan word om pasiënte te beraad oor enige van die vier risiko faktore wat gekoppel word aan nie-oordraagbare siektes.

Implikasies vir die praktyk.

Huisartse van verskillende departemente van Huisartskunde in Suid Afrika is opgelei om mediese studente, kliniese assistente, en algemene praktisyne verder op te lei. Die program is ook internasionaal aangebied in Botswana en Namibia.

Opsomming: Artikel 3

Titel

Evaluering van 'n opleidings program om die effektiwiteit van primêre gesondheidsorg werkers in kort gedrags verandering berading vir pasiënte met riskante lewenstyl gewoontes, wat gekoppel word aan nie-oordraagbare siektes te bepaal.

Doelwit

Om die effek op die kliniese praktykvoering van primêre gesondheidsorg werkers te evalueer nadat hulle opgelei is in 'n nuwe program om berading te gee vir pasiënte met riskante lewenstyl gewoontes, soos tabakrook, fisiese onaktiwiteit, ongesonde dieet, en alkohol misbruik. Die program kombineer die 5 A's (vra, adviseer, evalueer, assisteer en opvolg) met die leidende styl van motiverende onderhoudvoering.

Metodes

Die studie was 'n voor en na ontwerp, gebaseer op klankopnames van beradings konsultasies by basislyn, na die opleiding en ses weke later in kliniese praktyk. Elke klankopname was evalueer vir die toepassing van die leidende styl van motiverende onderhoudvoering, sowel as die 5 A's stappe. Die toepassing van die leidende styl is evalueer deur die Motiverende Onderhoudvoering Integriteit Behandeling Instrument (MITI 3.1), en die stappe van die 5 A's deur 'n instrument, gebaseer op die 5 A's opleidingsprogram raamwerk.

Resultate

Honderd-drie en twintig klankopnames van een en veertig primêre gesondheids sorg werkers met gestandaardiseerde pasiente, is verkry. Daar was 'n beduidende verbetering in die gebruik van die leidende styl (byvoorbeeld die globale telling by basislyn 2.0(2.0-2.6) en in kliniese praktyk 3.0(2.7-3.3) ($p < 0.001$), sowel as die voltooiing van die 5 A's stappe (byvoorbeeld, die assisteer stap by basislyn 1.26(1.12-1.4) en in kliniese praktyk 1.75(1.61-1.89) ($p < 0.001$).

Gevolgtrekking

Hierdie opleidingprogram was effektief om primêre gesondheidsorg werkers se beradings gedrag tydens kliniese praktyk te verander gedurende die kort-termyn.

Implikasies vir die praktyk

Die opleidingsprogram behoort ingesluit te word in die kurrikula van primêre gesondheidsorg werkers, en ook aangebied te word as deel van voortgesette professionele ontwikkeling programme.

Opsomming: Artikel 4

Titel

Kwalitatiewe evaluering van primêre gesondheidsorg werkers se ervaring van n opleidingsprogram in kort gedrags verandering berading vir riskante lewenstyl gewoontes gekoppel aan nie-oordraagbare siektes, in Suid Afrika.

Agtergrond

Die globale epidemie van nie-oordraagbare siektes word gekoppel word aan vier riskante lewenstyle naamlik tabakrook, fisiese onaktiwiteit, ongesonde dieet, en alkohol misbruik. Primêre gesondheids sorg werkers kan 'n belangrike rol speel deur pasiente met hierdie gewoontes te beraad, sodanig so, dat dit aanbeveel word om dit as deel van roetine primêre sorg te veskaf. Hierdie studie vorm deel van 'n nasionale projek wat 'n opleidings program ontwikkel het om 'n gestandaardiseerde berading benadering vir kort gedragsverandering berading vir primêre gesondheidsorg werkers te implementeer en te evalueer. Die program kombineer die 5 A's en die leidende styl van motiverende onderhoudsvoering. Hierdie artikel gee verslag oor 'n kwalitatiewe sub-studie wat rapporteer oor die persepsies van die primêre gesondheidsorg werkers in terme van hulle vermoë om die berading te verskaf, en of hulle dit kan doen ten spyte van vele struikelblokke in kliniese praktyk, asook hulle idees oor toekomstige opleiding en integrasie daarvan in kurrikulums.

Metodes

Die kwalitatiewe studie het data bekom vanuit twee bronne. Eerstens, mondelingse terugvoer vanaf kandidate voor en na opleiding, en tweedens twaalf individuele in-diepte onderhoude met kandidate na hul terugkeer in kliniese praktyk.

Resultate

Alhoewel die opgeleide kandidate se selfvertroue verbeter het, en sekere struikelblokke soos 'n gebrek aan tyd oorkom kon word, was ander struikelblokke nog steeds prominent. Personeel tekorte, gebrek aan ondersteuning op bestuursvlak, asook gebrek aan kontinuïteit van sorg was steeds teenwoordig. Die huidige organisatoriese kultuur was nie in pas met die onderliggende leidende styl van die opleidingsprogram nie. Die program behoort ingesluit te word in die voorgraadse kurrikula van primêre sorg dokters en verpleegsters, sodat die benadering van vroeg af aangeleer word. Die opleiding behoort ook as deel van voortgesette professionele ontwikkeling programme vir huidige primêre sorg dokters en verpleegsters aangebied te word.

Gevolgtrekking

Hierdie studie het bewys dat hierdie opleidingsprogram primêre gesondheidsorg werkers se indruk van hulle vermoëns om kort gedragsverandering berading te verskaf, verander het. Ten spyte van struikelblokke, het die opleiding hulle bevoegdheid om die berading te verskaf verbeter, maar daar was steeds beduidende struikelblokke. Dit is duidelik dat meer as net die opleidingsprogram nodig is om die berading ten volle in werking te stel in ons gesondheidsorg sisteem. Suksesvolle implementering sal 'n volledige, sistematiese benadering vereis, wat verskeie rolspelers insluit, soos bestuurders, pasiënte, en gesondheidsorg werkers.

Dedication

I dedicate this work to Tienie and Hannatjie, you have given me unconditional love and unwavering support for more than 50 years. I am blessed to be your child. Neel, love is truly magic, and it can survive anything. Liezle and Wian, my beautiful, strong, successful children, you make me proud to be a mother.

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List of abbreviations

- ARVs; antiretroviral drugs
- BBCC; Brief behaviour change counselling
- BECCI; Behaviour Change Counselling Index
- BM; Bob Mash
- BOD; Burden of Disease
- CDIA; Chronic Disease Initiative in Africa
- GP; General Practitioner
- HIV; Human immune deficiency virus
- HREC; Health Research Ethics Committees
- KE-M; Katherine Everett-Murphy
- LMIC; Low and middle income countries
- MI; Motivational Interviewing
- MINT; Motivational Interviewing Network of Trainers
- MISC; Motivational Interviewing Skills Code
- MITI 3.1; Motivational Interviewing Treatment Integrity tool
- MITS; Motivational Interviewing Target Scheme
- NDOH; National Department of Health
- NCD's; Non communicable diseases
- PCP; Primary care providers
- SA; South Africa
- USA; United States of America
- UK; United Kingdom
- USPTF; United States Preventative Task Force
- WHO; World Health Organisation
- YLL; Years of life lost
- ZM; Zelra Malan

CHAPTER 1

INTRODUCTION AND OVERVIEW OF THE THESIS

1.1 INTRODUCTION

In this chapter I describe the rationale for the study and why it was considered important to undertake the research in our South African setting. The chapter includes an argument for the social value of the study, the overall aim of the research, a description of the conceptual model that was used and an overview of the thesis.

1.2 THE SOCIAL VALUE OF THE STUDY

Thirty eight million people die each year around the world from non-communicable diseases (NCDs) and 74% of these deaths occur in low and middle income countries (LMIC). Four groups of diseases account for 82% of all NCD deaths, with cardiovascular diseases accounting for the majority, followed by cancers, respiratory diseases and diabetes.¹ Although NCDs are often associated with older age groups, 40% of deaths occur prematurely (before the age of 70 years), and 82% of these are in LMICs. The burden of disease from NCDs in LMIC is rapidly increasing worldwide, due to multiple factors such as urbanisation, ageing of populations and the globalisation of underlying risk factors.¹

A global strategy for the prevention and control of NCDs identified three key areas to focus on: Improving surveillance and tracking of the major risk factors, improving management to promote access to health care, and reducing the prevalence of associated behavioural risk factors.² Prioritising the prevention of NCDs by promoting healthy lifestyles and ultimately reducing associated risky behaviours is therefore recognized as an important strategy.^{3,4}

Smoking tobacco, harmful alcohol consumption, physical inactivity and unhealthy diet are the key modifiable behaviours contributing to morbidity and mortality from NCDs, but progress towards prevention has not kept pace with the rising burden of disease (BOD).^{2,5} In South Africa, NCDs have become the largest contributor to years of life lost (YLL), surpassing those from communicable and related causes. Deaths due to NCDs feature strongly in the ten leading causes of mortality, and it is clear that human behaviour and risky lifestyle choices are key drivers.⁶

The rising morbidity and mortality related to NCDs affects not only individuals, but also families, communities, and health care systems. Complications such as stroke, amputation, blindness, chronic kidney failure and heart failure disproportionately affect the socio-economically disadvantaged and impact the family in terms of income and requirements for care giving.^{4,7,8} The impact of NCDs on the working age population has the potential to slow development at a community and societal level. Ambulatory primary care is already dominated by NCDs, with

hypertension being the commonest disease seen (this is also because HIV and TB are seen in separate vertical programmes). NCDs impact not only in terms of their acute complications, but also in terms of the need to develop more effective systems for chronic care.⁹

Not only is the impact of NCDs felt at the individual, family, community and societal levels, but the opportunities for intervention can also be categorised according to such a model. An ecological approach to behaviour change, therefore, that recognises the complexity of factors driving the increase in NCDs and a systems view of life, could be useful.¹⁰ From this viewpoint, interventions aiming to change people's risky lifestyles should be targeted at different levels of the system, including society, communities, families and individuals. For example, at a societal level, policy making and government legislation can guide people to change risky behaviours. A good example of this is the recent introduction of legislation to reduce the salt content in South Africa.¹¹ At community level, for example, people can mobilise to create green spaces and safer environments to promote physical activity or to increase access to healthy foods.^{12,13} Interventions that focus at these levels are cost effective and target a large number of the population simultaneously. On the other hand, research has shown that individual interventions, which target the individual in the context of their family, on a one to one basis can also be effective. The primary care setting can potentially be an ideal setting for such an intervention. Patients have frequent contact with health care professionals (doctors and clinical nurse practitioners) in primary care, who are perfectly positioned to provide counselling on lifestyle modification, and they are also viewed by patients to be reliable sources of information.^{14,15} Primary care providers (PCPs) have a potentially vital and unique role in facilitating and motivating such behaviour change.^{3,15}

International research shows that brief behaviour change counselling delivered by PCPs can be effective.^{3,15,16} Not only is it cost -effective, it can also be delivered by a variety of PCPs, working in different clinical settings.^{17,18} Changing risky lifestyle behaviours through patient education and counselling is therefore an important approach to the cost effective utilisation of scarce resources in the public health sector.¹⁹ However, although it has been prioritised in the South African Strategic Plan for NCDs, the prevention of these lifestyle risk factors receives little attention in South Africa's health related activities.^{20,21} Health services in LMIC, like South Africa, are based on a model of treating acute illness, and are not organised for the prevention and ongoing management of chronic NCDs. In South Africa, the focus is shifting to ensure that high quality chronic care is available within primary health care, but counselling about NCDs and the underlying risk factors remains particularly inadequate.⁷

In conclusion, a comprehensive, multi-faceted approach to preventing and controlling the rising prevalence of NCDs, which is relevant to our setting, and realistic to implement at all levels of the system, should be prioritised. While policy and legislative approaches may be the most effective strategies at a structural level; the issue also needs to be addressed within communities, and at an individual level. PCPs can potentially play an important role in counselling patients with risky

lifestyle factors.⁴ The best interface for this counselling in SA would be within the primary care services, as this is where the majority of the population encounters the health care system on a regular basis.¹⁴

Up-skilling PCPs to deliver effective counselling for patients with risky lifestyles in our primary care setting is therefore an important part of the fight against the rising prevalence of NCDs.

1.3 KNOWLEDGE GAP AND SCIENTIFIC VALUE OF THE STUDY

The following chapter describes what is already known about this topic in detail and makes an argument for the scientific value of this study and the knowledge gap to be addressed. The key points however are that most evidence on BBCC comes from high income settings and there is little evidence of effective interventions in LMICs. The primary care context in LMIC, such as South Africa, necessitates that we develop and evaluate our own solutions. The 5 As construct, which is widely supported internationally, is seen as best practice in terms of a structured approach to BBCC. Motivational interviewing also has a strong evidence base for its effectiveness in BBCC, but is probably not a realistic approach in our primary care context. Although MI can be used as a brief intervention in many settings, and integrated into clinical practice, training PCP's to be competent in MI is not easy, and in our context unlikely to be achievable with the majority of PCP's in a short training course. This thesis therefore explored whether it is possible to combine the 5 A construct with the guiding style derived from MI and to successfully train our PCPs (nurses and doctors) to deliver this approach for a range of NCD related behavioural risk factors in their clinical practice context.

1.4 AIM

The aim of this research was to analyse the current situation, design, develop, implement and evaluate the effectiveness of a training intervention for PCPs to offer patients brief behaviour change counselling (BBCC) on the lifestyle risk factors associated with NCDs.

1.5 OBJECTIVES

The key objectives of the study were to:

- a. Undertake a situational analysis of the current training courses and approaches to behaviour change counselling amongst clinical nurse practitioners and primary care doctors in the Western Cape.
- b. Design a best practice BBCC training programme to meet the needs of PCPs, and to develop the structure and content of the training intervention, as well as the skills and resources needed to deliver this programme, and to implement it.
- c. Evaluate the effect of the training intervention on the counselling behaviour of the PCP's immediately after the training intervention.

- d. Evaluate the extent to which BBCC was incorporated by the PCP's into actual clinical practice.
- e. Explore the PCP's perspective on how feasible it was to implement the training in clinical practice.

1.6 CONCEPTUAL MODEL

The ADDIE model (Figure 1.1) provided a conceptual model for the thesis. It was used for mainly two reasons, firstly the model uses a systemic problem solving approach to the development of new training programmes, which is easy to understand, and follow, and secondly it has been used to develop new training programmes where the main focus is on changing the behaviour of participants. The model can be used to increase the effectiveness of interventions by guiding the researcher to understand the target population and those delivering the intervention, as well as the expected outcomes and strategies that can be used to achieve these outcomes.^{22, 23} The steps of the ADDIE are: the Analysis of learning needs, the Design and Development of the training programme, its Implementation and Evaluation. The methods used to complete each step of the model are described below.

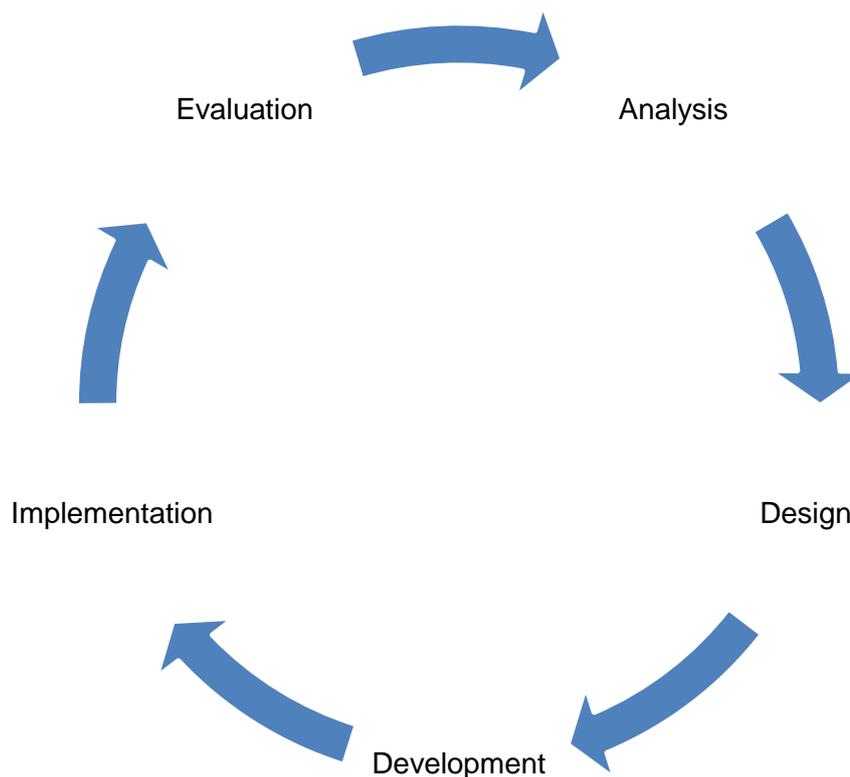


Figure 1.1: The ADDIE process for development of training programmes

The conceptual model is described below and related to the different parts of the thesis.

Step 1: Analysis

The purpose of the analysis phase is to gain insight into the problem, by conducting a needs analysis relative to the target learners. It includes analysing the target populations existing knowledge, and attitudes, what they want to learn, and why, as well as the factors influencing the learning environment. Essentially this step helps us to understand the underlying values and beliefs that drive current behaviour, and the environmental factors that influence it. The detailed situational analysis of this study is discussed in Article 1, Chapter 3.

Step 2: Design

The purpose of the design phase is to systematically identify specific strategies for closing the gap that was conceptualized in the analysis step. This phase includes the design of the blueprint of specific elements of the intervention, such as the teaching and learning objectives, learning strategies, learning activities, assessment instruments, and delivery options. The design phase is discussed in Article 2, Chapter 3.

Step 3: Development

The purpose of the development phase is to develop the content and materials for each of the elements of the blueprint that was designed in the previous phase. This involves the identification and development of the relevant learning resources, for instance educational materials. The development phase is described in Article 2, Chapter 3.

Step 4: Implementation

The purpose of the implementation phase is to launch the intervention, and involves preparation of the facilitators and students. The implementation phase concludes the development activities, and includes the ongoing formative evaluation of the design. Upon completion of the implementation phase the instructor should be ready to move to the actual learning environment. The implementation phase is described in Article 2, Chapter 3.

Step 5: Evaluation

The purpose of the evaluation phase is to assess the quality of the intervention, both before and after the implementation, and helps the instructor to determine if the intervention was successful. This phase includes formative and summative assessments. Formative assessment is conducted during each phase of the ADDIE process to determine the quality of each phase. Summative assessment is conducted during the evaluation phase to determine the overall effect of the intervention on the students' performance. The summative and formative evaluation of the intervention is described in Articles 3 and 4, Chapter 3.

1.7 OVERVIEW OF THIS THESIS

To get the bigger picture of this research, one might require a bird's eye viewpoint on the project as a whole. To help the reader to envisage this, Figure 1.2 aims to clarify the rationale for the structure of the thesis, explaining in a step wise approach why it was designed in a specific way, and how each step was performed.

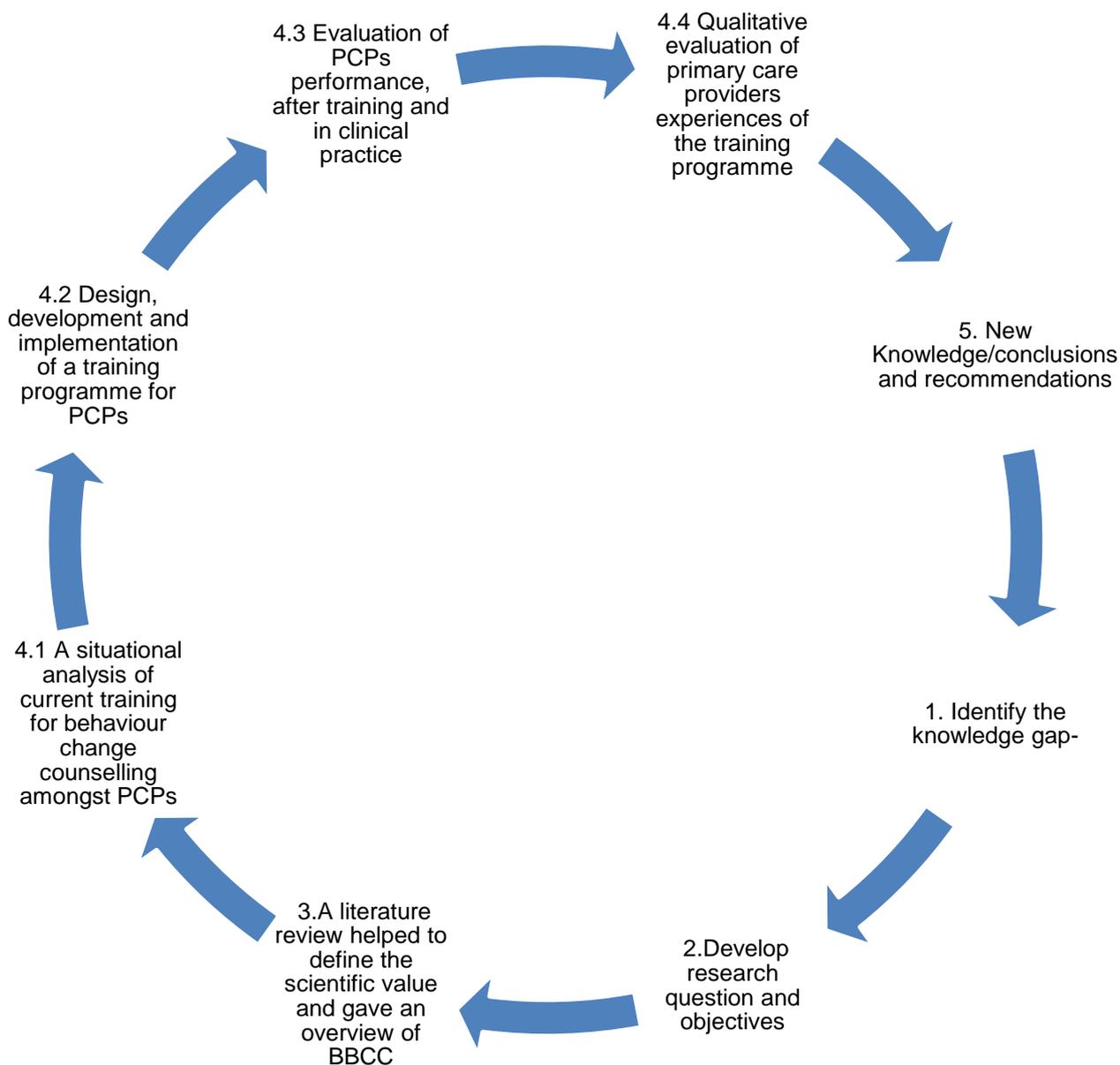


Figure 1.2: Overview of the thesis (adapted from Leshem and Trafford 2007)²⁴

Step 1: Identify the knowledge gap.

The knowledge gap and contribution to new knowledge that this thesis will address is outlined in Chapter 1 and expanded on more fully in Chapter 2.

Step 2: Develop research question, aim and objectives

The research question, aim and objectives that flow logically from this knowledge gap are defined in Chapter 1.

Step 3: Conduct a literature review to establish the scientific value of the research, and a conceptual overview of what we know about BBC, and what we would like to find out.

Chapter 2 reviews the literature in order to establish what is already known about BBC in primary care and to clarify the knowledge gap. This Chapter also identifies the tools currently available for assessing the impact of training.

Step 4: Collect data to answer the research question, aim and objectives

Chapter 3 includes the four published articles each of which provides information on the methods and results and discusses the findings.

4.1 Article 1

The article presents a situational analysis of the current training courses and approach to behaviour change counselling amongst programme coordinators, clinical trainers, primary care nurses and doctors, in our setting.

4.2 Article 2

The article describes how the training programme was designed and developed, based on best practice guidelines, but in the South African context.

4.3 Article 3

The article presents an evaluation of the effect of the training intervention on the counselling behaviour of primary care nurses and doctors immediately before and after the training intervention as well as on return to their clinical practice. These nurses and doctors were a different group from those in Article 1.

4.4 Article 4

The article presents the results of a qualitative evaluation of the extent to which BBCC was incorporated by the PCPs into their actual clinical practice and their perceptions of the enabling factors and barriers involved in the clinical environment. These nurses and doctors were a subset of those evaluated in Article 3.

Step 5: Conclusions and recommendations

Chapter 4 provides the conclusions of the thesis for each of the objectives and tries to integrate the findings into a single conceptual model, from which key recommendations can be extrapolated.

This Chapter demonstrates how the knowledge gap was addressed by this thesis and brings the thesis full circle.

1.8 ETHICAL CONSIDERATIONS

The social and scientific value, scientific validity and fair selection of participants was described in the application for ethical approval. The risks to participants were minimal, and the benefits /risk ratio was favourable. The research was submitted for ethical approval to the Health Research Ethics Committee at Stellenbosch University (N11/11/321) and for permission from the Department of Health in the Western Cape (RP 029/2013). Key informants, nurses, and doctors gave written consent, and research assistants were remunerated for their services. The researcher drew up a short contract with each research assistant to define the details about payment, and to ensure confidentiality of information and data collected. The confidentiality and privacy of all interviewees and participants was respected in data analysis and reporting.

1.9 CONCLUSION

In this Chapter I have described the social value of the research, and why this topic was viewed as an important issue to address. This Chapter also presented the knowledge gap that will be addressed, the aim and objectives, the conceptual model for the thesis, and an overview of the thesis. In the following Chapter the scientific evidence on brief behaviour change counselling is reviewed and the knowledge gap to be addressed in this thesis is made visible and clarified further.

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CHAPTER 2

SCIENTIFIC VALUE OF THE STUDY

2.1 INTRODUCTION

This chapter describes the findings from a literature review on what is already known about the best methods and approaches to training health care workers in BBCC. I argue for the scientific value of the study in terms of what we already know about the effectiveness of brief behaviour change counselling in international and local studies and what this study will add to the body of evidence.

While this was not intended to be a formal systematic review, a search strategy was used to identify the relevant literature. I identified relevant and appropriate studies by searching PubMed, Google Scholar, Sabinet and the Cochrane Collaboration, using the terms preventative medicine, health promotion, primary care, counselling and behaviour therapy. In the search I prioritised systematic reviews as these synthesise the evidence and are at the top of the evidence-based medicine hierarchy as well as studies from the local context. As a second strategy, I identified relevant key scholars from the literature review and institutions, and searched for their recent critical publications, as well as new authors citing them, and which references they used.

It is clear from Chapter 1 that much has to be done at a global level to change risky behaviours. From an ecological viewpoint, such interventions strategies could target different levels of society, such as an individual level, family level, community level or whole population level.

To improve global healthy lifestyle change, the need to connect all stakeholders, identify their overarching roles, and potential impact has been recognised internationally.¹ Figure 2.1 demonstrates this comprehensive approach to healthy lifestyle promotion, education and interventions. The need for such an integrated approach is evident when developing a global action plan. For instance, at government level the WHO recently found that only 47% of low and middle income member countries, had documented strategies to combat NCDs.¹ On the other hand, at the individual level, the patient is both a stakeholder, as well as the ultimate recipient of these strategies. The need to involve the patient and their families is central to changing risky behaviours and sustaining healthy behaviour. For instance, at a family level, involving women to incorporate healthy diets could be instrumental to sustaining behaviour in certain communities.

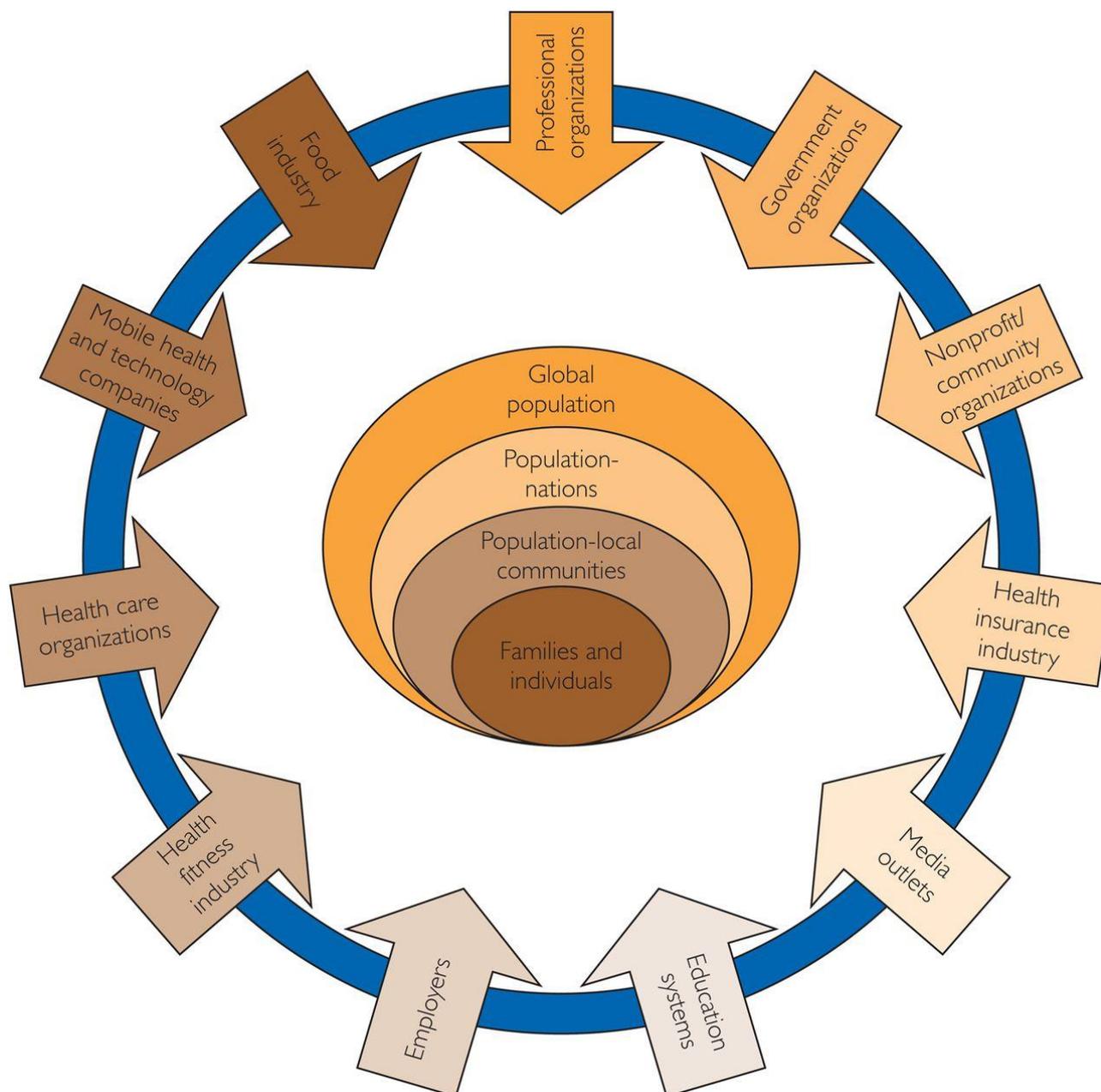


Figure 2.1 Model for a comprehensive approach to healthy lifestyle promotion, education and interventions¹

2.2 EFFECTIVENESS OF BEHAVIOUR CHANGE COUNSELLING

Health care professionals working in ambulatory primary care are also viewed as important stakeholders in promoting healthy lifestyles. Not only do patients value face to face behaviour change counselling interventions provided by PCPs, but PCPs also have the access to patients to opportunistically provide advice about healthy lifestyles.^{2,3,4,5}

The United States Preventative Task Force (USPTF) is regarded as one of the world's most authoritative sources of evidence on preventive activities because of the rigorous process that they follow in obtaining, appraising and interpreting the strength of global evidence on key interventions. These recommendations focus on asymptomatic people who may receive this

preventative intervention as part of a routine visit. The steps followed by the USPTF to identify and synthesize evidence, and draw conclusions on the effectiveness of the prioritised intervention are to:

1. Define the intervention and hypothesized mechanism
2. Identify inclusion/exclusion criteria for systematic reviews
3. Synthesize results of multiple studies
4. Address applicability of findings to stakeholders
5. Summarize harms and benefits
6. Identify and summarize evidence gaps
7. Develop recommendations

They also grade the strength of the intervention as: recommended, not-recommended or having insufficient evidence. Table 2.1 demonstrates the two main variables that are used to make these recommendations, which are the magnitude and certainty of benefit. Independent judges are assigned for both variables. For certainty of net benefit, the quality of evidence identified in the systematic evidence review is scored as high, moderate or low. The magnitude of net benefit is estimated by the magnitude of benefits minus the magnitude of harms. The recommendation is then graded from A to D or if insufficient evidence exists as an I, as shown in Table 2.1.

Table 2.1 USPTF recommendation grid.

Certainty of net benefit	Magnitude of net benefit			
	Substantial	Moderate	Small	Zero/Negative
High	A	B	C	D
Moderate	B	B	C	D
Low	Insufficient			

Estimating net benefit is challenging in behavioural counselling interventions due to the need to extrapolate ultimate benefits. The challenge lies in linking the behavioural intervention with behavioural outcomes (such as smoking cessation) and ultimately with health outcomes (such as lung cancer), over time, across communities, populations or different settings.⁴ Few behavioural counselling studies measure effects on health outcomes, such as death; disability; or quality of life. Even the assessment of intermediate biometric risk factors, such as lipid levels, blood pressure, and blood glucose level, is uncommon.^{4,6} The USPTF mostly use the evidence from systematic reviews that measure health outcomes. That means that if the link to a health outcome cannot be established because of lack of evidence at this level, a low certainty might be assigned to the

intervention. For instance, recently the Task Force recommended that “for adults without pre-existing cardiovascular disease or its risk factors, the average benefit of primary care behavioural counseling interventions to promote healthful diet and/or physical inactivity for cardiovascular disease prevention is small”. This was critiqued by the American Heart Association, who encouraged the USPTF to revise the recommendation based on the fact that it does not support clinicians to counsel patients to maintain healthy behaviours, and discourage the development of unhealthy behaviours. In other words the absence of evidence of benefit at the level of health outcomes is not evidence of a lack of benefit per se and should not be used as an argument for not providing patient education and counselling.

The Community Preventative Services Task Force (CPSTF) which works alongside the USPTF, makes recommendations for prevention based on evidence from intermediate outcomes like behaviour changes. It provides recommendations on how clinicians and health systems can implement the clinical recommendations of the USPTF and improve their uptake. Linking the recommendations from the two Task Forces is ongoing, and could enhance recommendations for future behavioural counselling preventative services.

Despite the fact that the primary target for use of their recommendations is the US health system this remains a useful synthesis of the evidence for all countries. Their recommendations with regard to behaviour change counselling are summarised in Table 1. In summary, the USPTF has identified brief counselling as adequate to help patients improve health for only alcohol misuse, skin cancer, tobacco smoking cessation and prevention. They state that although these brief interventions are effective, more intense interventions are more effective. Despite the USPTF recommendations other bodies, such as the National Voices project, which focuses on evidence for patient-centred care in the UK, and a collective formed by the American Heart Association, European Society of Cardiology, European Association for Cardiovascular Prevention and Rehabilitation, and American College of Preventative Medicine have recommended that brief opportunistic advice from health care providers in primary care reduces tobacco smoking, increases physical exercise, improves diets and reduces alcohol consumption.^{1,2} These recommendations were based on 228 systematic reviews published between 1998 and 2013, which focussed on the extent to which interventions impacted on people’s knowledge, experience, service use, costs, behaviour and health outcomes.

The take home message with regard to behaviour change counselling for NCDs in primary care is that the evidence base for the effect on health outcomes is modest and effect sizes are strongest for counselling on tobacco smoking and harmful alcohol use. There is more evidence for the effect on behavioural outcomes and surrogate intermediate indicators than health outcomes. Making sense of the evidence is however more complex than for other preventative activities such as preventative medication or screening interventions.⁷

Table 2.2 provides a summary of the 11 behaviour change interventions currently recommended by the US Preventative Task Force (USPTF).

Table 2.2: USPSTF Recommendation Statements on Behavioural Counselling Interventions		
Topic	Year	Current grade
Healthful Diet and Physical Activity to Prevent Cardiovascular Disease in At-Risk Adults	2014	B: The USPSTF recommends offering or referring adults who are overweight or obese and have additional cardiovascular disease (CVD) risk factors to intensive behavioural counselling interventions to promote a healthful diet and physical activity for CVD prevention.
Primary Care Behavioural Interventions to Reduce Illicit Drug and Nonmedical Pharmaceutical Use in Children and Adolescents	2014	I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of primary care–based behavioural interventions to prevent or reduce illicit drug or nonmedical pharmaceutical use in children and adolescents. This recommendation applies to children and adolescents who have not already been diagnosed with a substance use disorder.
Primary Care Interventions to Prevent Tobacco Use in Children & Adolescents	2013	B: The USPSTF recommends that primary care clinicians provide interventions, including education or brief counselling, to prevent initiation of tobacco use in school-aged children and adolescents.
Screening & Behavioural Counselling Interventions in Primary Care to Reduce Alcohol Misuse	2013	B: USPSTF recommends that clinicians screen adults aged 18 years or older for alcohol misuse and provide persons engaged in risky or hazardous drinking with brief behavioural counselling interventions to reduce alcohol misuse. I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening and behavioural counselling interventions in primary care settings to reduce alcohol misuse in adolescents.
Behavioural Counselling to Prevent Skin Cancer	2012	B: The USPSTF recommends counselling children, adolescents, and young adults aged 10–24 years who have fair skin about minimizing their exposure to ultraviolet radiation to reduce risk for skin cancer. I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of counselling adults older than age 24 years about minimizing risks to prevent skin

		cancer.
Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults	2012	C: Although the correlation among healthful diet, physical activity, and the incidence of cardiovascular disease is strong, existing evidence indicates that the health benefit of initiating behavioural counselling in the primary care setting to promote a healthful diet and physical activity is small. Clinicians may choose to selectively counsel patients rather than incorporate counselling into the care of all adults in the general population.
Screening for and Management of Obesity in Adults	2012	B: The USPSTF recommends screening all adults for obesity. Clinicians should offer or refer patients with a BMI of 30 or higher to intensive, multicomponent behavioural interventions.
Screening for Obesity in Children and Adolescents	2010	B: The USPSTF recommends that clinicians screen children aged 6 years and older for obesity and offer them or refer them to comprehensive, intensive behavioural intervention to promote improvement in weight status.
Counselling & Interventions to Prevent Tobacco Use and Tobacco-Caused Disease in Adults & Pregnant Women	2009	A: The USPSTF recommends that clinicians ask all adults about tobacco use and provide tobacco-cessation interventions for those who use tobacco products. A: The USPSTF recommends that clinicians ask all pregnant women about tobacco use and provide augmented, pregnancy-tailored counselling for those who smoke.
Behavioural Counselling to Prevent STIs	2008	B: The USPSTF recommends high-intensity behavioural counselling to prevent STIs for all sexually active adolescents and for adults at increased risk for STIs. I: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of behavioural counselling to prevent STIs in non-sexually active adolescents and in adults not at increased risk for STIs.
Counselling to Promote Breastfeeding	2008	B: The USPSTF recommends interventions during pregnancy and after birth to promote and support breastfeeding.

Individually targeted, brief, behaviour change interventions, that are feasible in healthcare settings, often have only a modest behaviour change impact as only 6-15% of those receiving brief interventions make clinically significant changes such as quitting smoking or reducing heavy

drinking. However, these modest impacts can translate to significant benefits to the health of the population as a whole, when systemically applied to all those in need. Therefore BBCC interventions have the potential to achieve important reductions in chronic disease, health care costs, and the overall burden on health care services and providers.^{2,3}

The generalizability of evidence on the effectiveness of behaviour change counselling is also a challenge. The effect of such complex interventions may be highly related to the health services and community context in which the intervention was tested. Unlike with a medication one cannot necessarily assume that the effect on a defined patient will be similar wherever the drug is used. Evidence shows that pragmatic studies designed and implemented with representative populations in actual practice settings, have the most value for rapid translation and may best inform practice guidelines.⁴ Most of the research on the effectiveness of behaviour change counselling by PCPs is from high income countries, such as the USA, UK, Europe, Australia and Canada.^{6,7,9,10,11} Little is known about the effectiveness of such counselling in LMIC like South Africa and what might be appropriate in our context.^{12,13}

This study starts to address this gap in the current knowledge base in our South African context. The question that we asked was: “What is the effect on counselling behaviour of an intervention to train primary care providers to deliver best evidence based, brief behaviour change counselling for the risk factors associated with NCDs in the South African primary care setting?”

2.3 THE SOUTH AFRICAN PRIMARY CARE SETTING

In South Africa there are nine provincial departments of health, which are responsible for the development of provincial policy within the framework of national policy and public health service delivery, including health prevention and promotion. The public health care sector serves more than eighty percent of the population, is mainly nurse driven, and is offered at clinics, district hospitals and community health services. On the other hand, the remaining twenty percent of the population is serviced by the private sector consisting mostly of general practitioners and private hospitals which are either funded through medical insurance schemes or from the pocket. The private sector services are unequally distributed through the country, for instance seventy percent of the private hospitals are located within three of the most affluent of the nine provinces. Historical imbalances in health care delivery, coupled by a complex burden of disease, therefore places a huge strain on our public health services.^{12,13} We are faced with an unbalanced health care delivery system driven by curative services, with lack of commitment to promotive and preventative services, and ineffective leadership, which inevitably widens the gap of the existing health inequality. Some of the factors contributing to this include resource constraints, poor continuity of care, migration of professionals, unequal distribution of personnel in private and public sectors, low skills levels, poor staff motivation and lack of managerial capacity.¹² Therefore the counselling approach that is used in high income settings, may not be realistic to implement in the context of

countries such as SA. In reality we rely on mid-level PCPs and nurses to provide the bulk of health education and lifestyle counselling, within the context of a dysfunctional and overburdened, primary health care service.¹³

2.4 BEHAVIOUR CHANGE THEORIES

Behaviour change theories are attempts to explain why and how behaviours change, but they do not necessarily provide the PCP with clinical skills in changing behaviour. However, it is important to understand these theories, as they could guide researchers and providers to understand the underlying mechanisms of behaviour change, and they can also be used for educational purposes to guide the development of effective interventions to change behaviours, like the Social Cognitive Theory, and the Theory of Planned Behaviour.^{14,15} These theories address the social context in which a programme will be initiated, and provide insight into the effectiveness of education programmes. Although these theories can be used to predict and explain behaviours in health promotion, their focus is not on maintenance of behaviour, but rather on initiation of behaviour. On the other hand, the Stages of Change Model, which can also be applied to health education, ignores the social context in which change occurs, but includes the concept of the individual psychologically moving through stages to ideally make a permanent change in behaviour. Although it can help providers to understand the experience of behaviour change, it is unable to predict or explain change, and the evidence does not support the use of interventions based on this model alone, but rather on different behavioural theories applied to each step.^{14,15}

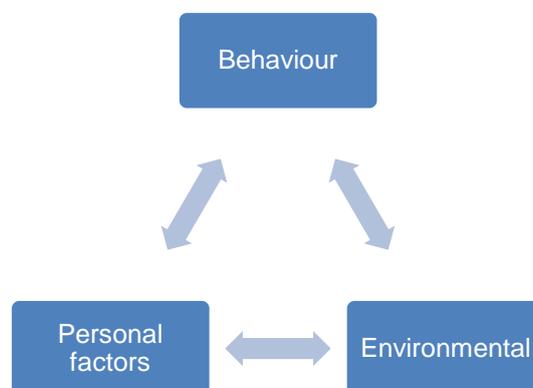


Figure 2.2: The social cognitive model

This model suggests that behaviour change is determined by personal, environmental and behavioural elements. Personal factors include drives, traits, instincts and motivational forces, while environmental factors include situational influences which might influence behaviour. In practice this suggests, that to increase levels of self-efficacy, it is important to provide resources and support, by shaping the environment, and thereby increase confidence.^{14,15}

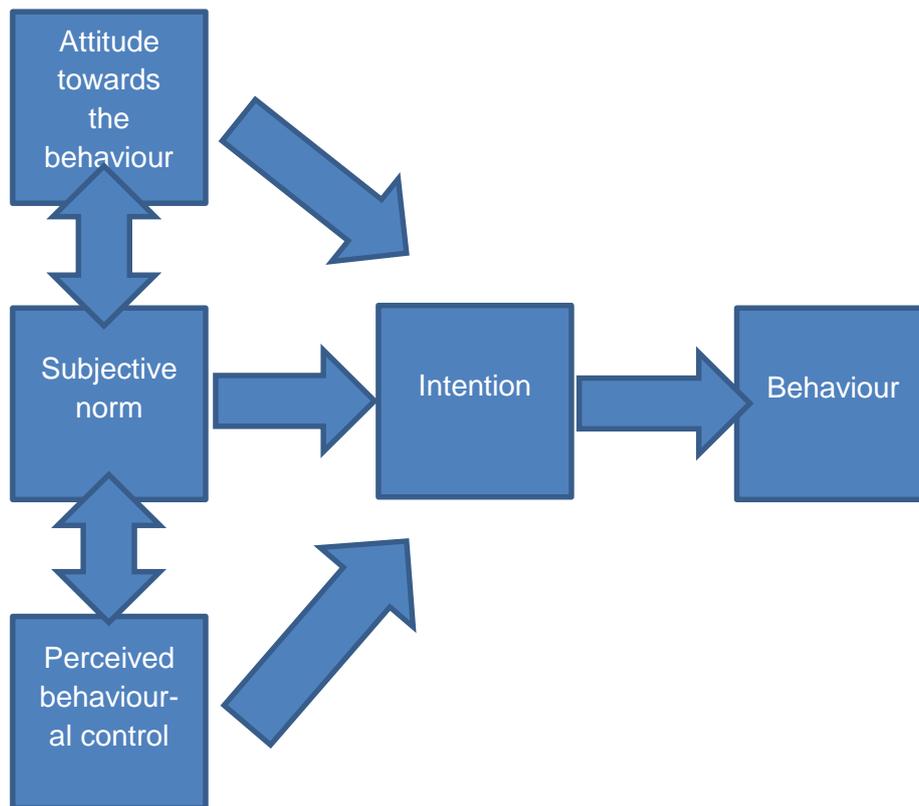


Figure 2.3: Theory of planned behaviour

This theory suggests that a person's behaviour is dependent on their intention to perform behaviour. Intention is the most important variable in predicting behaviour change, and it is determined by the person's attitude (beliefs and values about the outcome of the behaviour), subjective norms (beliefs about what other people think they should do) as well as their perceived behavioural control (perception of their ability to perform the behaviour). In practice this suggests that perceived control over opportunities, resources and skills needed, is also an important part of behaviour change.^{14, 15}

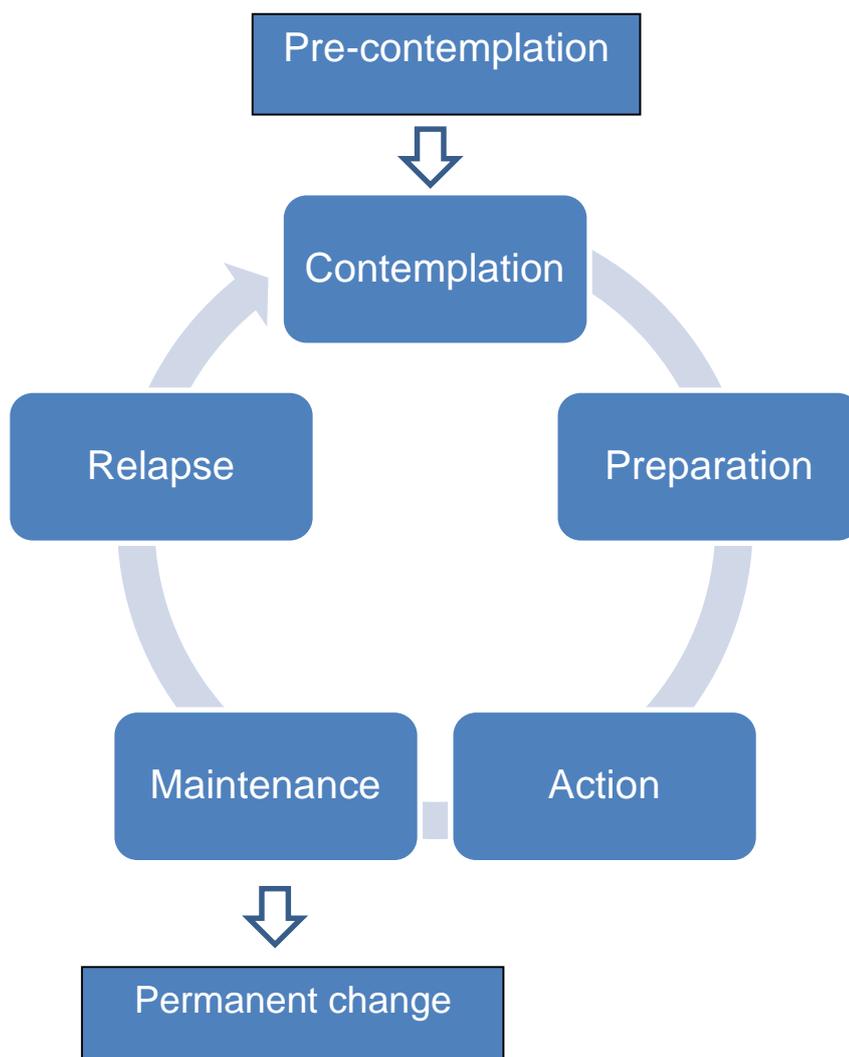


Figure 2.4: The stages of change model

This model proposes that behaviour change is part of a process of six stages. Pre contemplation is the stage when a person does not intend to make a change in the near future, contemplation is the stage where they intend to change, preparation is where they have a plan of action, action is where they actually change, maintenance is when the person maintains the behaviour, and relapse is the stage when they revert back to previous behaviour. In practice, this theory proposes that any behaviour change intervention should match the stage where the person is at.^{14, 15}

Although many theories exist, one of the important elements that is common to several of the theories, is the aspect of self-efficacy. Self-efficacy refers to the level of a person's confidence in their ability to change behaviour, and it is important because it relates directly to changing behaviour.¹⁶ In other words the more confident the individual feels in their ability to succeed; the more likely they are to initiate change and maintain the change over time. Although self-efficacy is influenced by a variety of factors, such as personal beliefs, previous behaviour and social

influences, it is clear that increasing a person's confidence by empowering them to believe that they can do something for themselves, is key to helping them change behaviour.^{16,17}

In order to engage with a patient about their confidence to change behaviour, it is vital to understand the patient as a whole person in their broader context. Patient centred care emphasises the need to empathically understand not only the patient's medical problems, but also their own perspective on their situation and their context.² Understanding what is important to the patient, their concerns, beliefs, preferences, fears, and important contextual issues enables the practitioners to negotiate more realistic and mutually acceptable goals and solutions. This bio-psycho-social approach or whole person medicine is at the heart of generalism and family medicine.

The backbone of family medicine is the ability to offer holistic care, which involves the skilled ability to communicate effectively with patients who are facing difficult decisions about changing behaviour. Effective communication includes the ability to promote healthy lifestyles to empower individuals to feel confident in making healthy choices.

2.5 BEHAVIOUR CHANGE COUNSELLING APPROACHES

A number of behaviour change approaches available to assist PCPs to provide counselling for behaviour change. The evidence does not support the use of one specific approach, although some have more evidence of effectiveness than others.

The Flinders approach for instance uses a patient centred, individualised approach, and targets goals that the patient wants to work on. Although it can be targeted at either acute or chronic care consultations, it is perceived to be time consuming, especially in primary care settings. Patients sometimes perceive the approach as confronting, especially when the approach requires them to play an active role, which they might not want.¹⁷

The Stanford approach involves a peer led approach which focusses on problem solving and goal setting from the patient's perspective rather than from the provider. Although the course has been scientifically evaluated over 25 years, in multiple populations, it has reduced capacity to address individual needs. Issues with sharing personal information and confidentiality with peers in groups have also been reported¹⁷

Health coaching is a relatively new, evidence based approach that focusses on working with patients, using specific skills rather than only using a model, such as the stages of change model.¹⁷ Although the approach is flexible, and cost effective, it can be daunting to use for inexperienced professionals. The approach is highly reliant on the skills and experience of the counsellor, and therefore issues of accountability and quality assurance frequently arise.¹⁷

The 5 As approach is a brief, step wise approach, that provides structured guidance to PCPs on how to counsel patients with risky lifestyle behaviours.^{7,9} It was originally developed for use in

smoking cessation, but has been adopted internationally, as an evidence based approach when engaging in general behaviour change counselling. There is evidence to support each step in the 5 As model including the use of stages of change theory and motivational interviewing.^{7,16,17,18} The integration of the 5 As into primary care settings is actively promoted by a number of high profile international bodies, such as the Royal Australian College of GPs, The US and Canadian Task Forces on Preventative Health, and the International Primary Care Respiratory Group.^{7,8,9,11,14,17} The 5 As is a straight-forward, easy to learn, acronym which may take 5-10 minutes, depending on the clinical setting and roles, and may involve different staff members to save time and resources.⁷ Although it is conceptually better suited to brief interventions, it has little accountability in how the steps are delivered to ensure a patient centred approach versus traditional directive approach. In some instances it might be seen as a one sided intervention from the provider, in which the patient's perspective is minimised? It also has limitations for practical implementation, and involvement of multiple team members is often required.

The original 5 As construct consisted of five steps:

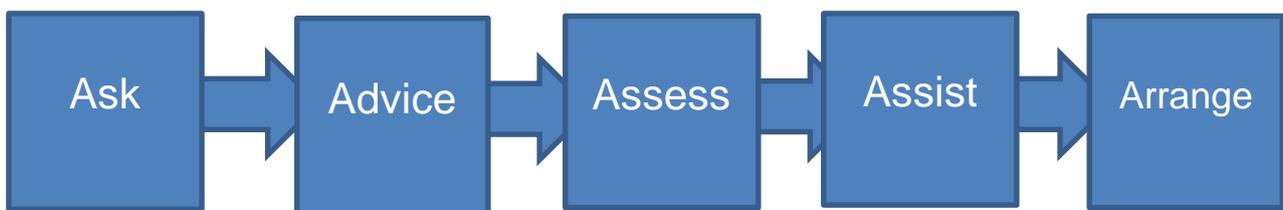


Figure 2.5: The 5 A steps

- Ask – ask about, assess and document behaviour risk factors
- Advice – provide clear information on the health risks, and brief personalised advice
- Assess – assess the importance and confidence of the individual to change
- Assist – with planning to change, and with appropriate social or medical support, and supplementary educational materials where appropriate
- Arrange – schedule follow up contact, arrange relevant referrals, and ongoing assistance/support.

Another evidence-based approach to behaviour change counselling is motivational interviewing (MI). MI was initially developed for substance abuse issues, but has since developed as an approach that can be used in different behavioural domains, and it has wide applicability within health care settings.^{18,19} MI is not a simple technique, but rather a complex set of skills that are used flexibly within conversations about change. MI is fundamentally different from the traditional directive and confrontational approaches used in everyday clinical practice. Traditionally, PCPs embody the role of the expert advice giver, and try to convince the patient why, what and how they should change. In MI the argument for change is evoked from the patient, expertly guided by the PCP, through a shared decision making process. Essentially the focus of the traditional directive style is provider centred, whilst with MI it is patient centred. The patient is recognized as the expert

in their own life and the PCP values and respects their autonomy about how, when and what needs to change. The patient plays an active role, whilst the PCP provides structured direction, expert information and negotiates change sensitively, like an expert guide.¹⁹

Although MI is a collaborative, respectful, empathic and evocative process, it does not lack direction. This direction is conceptualised as having four phases: ¹⁹

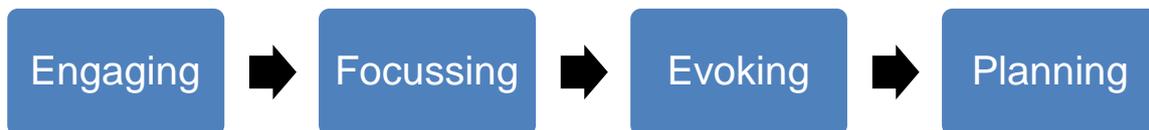


Figure 2.6: The four processes of motivational Interviewing

- Engaging – during which the patient and health worker build trust, rapport and understanding
- Focusing – during which they agree on a specific behaviour change topic to explore through a process of agenda mapping
- Evoking – during which the health worker evokes change talk from the patient and assesses the patient’s readiness to make a commitment to change
- Planning – during which the health workers assists the patient to make a clear and feasible plan for change, but only if they are ready for this.

MI is a flexible approach that can be delivered by a range of professionals, in a variety of formats and time frames for patients of different ages, genders and ethnicities.^{17,18,20} MI has a 55% increased chance of producing a positive outcome in general medical settings, when compared to routine care. Positive outcomes include a reduction in blood pressure, cholesterol levels, body weight and dangerous drinking; smoking cessation; increased patient confidence, intention to change and engagement with care.^{20,21} Specifically evidence from a recent systematic review and meta -analysis of randomized control trials on motivational interviewing in a medical care setting provides substantial evidence for broad application in diverse settings.²⁰ Although concerns has been raised to clarify or refine the publication, sufficient evidence about the use of MI in medical settings exists in the literature.^{17,18,19,21,22,23,24}

The effectiveness of MI is directly related to what is referred to as the “spirit” of MI, which is at the core of the approach. Adherence to the spirit of MI is reliably measurable and predicts the effectiveness of the intervention. The spirit of MI is underpinned by a collaborative, therapeutic relationship between provider and patient.^{19,22} This approach to counselling is also referred to as a person centred form of counselling.

A person centred approach means that a counsellor works in collaboration with the patient as equal partners to decide on the design and delivery of the services. This approach takes into

account the patient's social, cultural and economic context, motivation and skills, including any potential barriers they might face to maintain the behaviour change.¹⁹

Training PCPs to become fully proficient in MI is not easy because training involves a relatively large investment in training time and requires a strong foundation in patient-centred communication.^{20,21} In addition MI as a psychotherapy in the field of substance abuse often involves longer (60 minutes) and multiple episodes of counselling, which is not feasible in our primary care setting.²⁰

Strategies based on the principles of MI used in brief interventions have become increasingly popular. Evidence shows that such interventions (as brief as 15 min) is superior to minimal or non-treatment controls and as good as more intensive treatment interventions for a range of risky behaviours, which include adherence to chronic medication such as ARV adherence.^{10,24} It is therefore clear that applying adaptations of the key principles of MI to training PCPs in brief interventions in low and middle income countries, may be appropriate. However in diffusing the method, there is a risk of losing inherent quality control and accountability. In an attempt to reduce this possibility, it might be helpful to understand and apply the underlying principles of the spirit of MI, especially when training PCPs in delivering shorter interventions. These underlying essential elements include collaboration, empathy, and support of autonomy, evocation and direction.²⁴

Four fundamental practical communication skill sets are used for the delivery of brief motivational interventions.¹⁹ Table 1.1 lists each skill, the purpose of using the skill and an example of how it can be used.

Table 1.2: The basic skills of motivational interviewing

OARS: The basic skills of motivational Interviewing	
Skill	Example
Open ended questions: Helps the patient to elaborate on their personal circumstances and views.	I understand that you have some concerns about your smoking; can you tell me more about them?
Affirmations: Helps the patient to recognize their own strengths and build confidence	I appreciate that it took a lot of courage to discuss your drinking with me today
Reflections: Helps the patient to feel "listened to" and demonstrates empathy	You enjoy the effects of alcohol of how it helps you relax after a long day. But you are worried that it could be affecting your health, and you're no longer sure if you can control it.
Summaries: Helps to structure the counselling	Let me just check if I understand what we have discussed so far. You have been worrying about how much you've been drinking

session, demonstrate empathy and encourages elaboration by the patient	in recent months because of your health and you're partner isn't happy with how much you're drinking. You've tried to stop a few times, but it hasn't been easy.
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2.6 FURTHER DEVELOPMENT OF THE 5 AS

The construct of the 5 As, however, has not always been translated into clinical practice and there are concerns about whether more attention should be given to the nature of the interaction and communication skills.^{6,10,17,26} Strayer argues that a possible limitation of this construct may be a lack of clinical expertise in the practical aspects of assessing patients for their readiness to change, how to assist them, and specifics about arranging follow-up with patients.¹⁰ A patient centred approach is important in the delivery of the 5 As.²⁷ It is recognized that the 5 As has little ability to ensure that the steps are delivered in a patient centred communication style vs. the traditional provider centred directive style. The possibility exists that the PCPs will continue to assert their perceived role as the authoritarian expert in the counselling, whilst using the 5 As steps. It is clear that following the 5 As in a guiding style requires a number of communication skills.

In an attempt to address these possible limitations and to improve the effectiveness of the 5 As approach, researchers have recently explored the possibility of retaining the 5 A structure, but incorporating the guiding style of MI into each step.¹⁰ Practitioners are urged to shift away from the prescriptive advice giving approach typically used in medical consultations to engage the patient in decision making, such as the patient centred approach used in MI.^{1,19,20}

2.7 ADOPTION AND IMPLEMENTATION OF THE 5 AS IN SOUTH AFRICA

Recent studies to assess the capacity of health care providers in South Africa to deliver behaviour change counselling, suggest that such counselling is inadequate in both the public and private sectors. Nurses in the public sector, provide patient education and counselling to the majority of the population. Despite most nurses accepting this role, and 20% perceiving themselves to be knowledgeable, they may have an inflated perception of their knowledge on lifestyle modification for NCDs. Alarming, only 20% of doctors, 15% of health promoters and 0% of professional nurses had excellent knowledge of the key issues around NCD risk factors.⁵ Other health workers, such as obstetricians and midwives, also showed low levels of knowledge around the delivery of smoking cessation counselling to pregnant smokers.²⁸ In the private sector, general practitioners failed to improve their performance in screening and recording overweight and obese patients, or to provide them with advice or referral to a dietician, even after receiving a training session.²⁹ It is clear that capacity building for our health care providers, should be a priority.

A local pragmatic clustered randomised controlled trial of health promoters, who were trained to provide group BBCC to diabetic patients, demonstrated that their ability to guide improved

significantly, but without achieving MI proficiency.³⁰ Yet in this study, the health promoters were still shown to have a clinically significant effect on reducing blood pressure one year after the intervention.³¹ This intervention was also found to be cost-effective.³² The study however struggled with a low follow up rate and poor attendance of patients at the educational sessions. Another local study that evaluated the combination of the 5 As and a guiding style delivered by midwives and lay counsellors also demonstrated a clinically significant effect on smoking cessation, although the training was not evaluated, and the fidelity of the counsellors to the method in clinical practice was not rigorously assessed.³³ This was also a quasi-experimental study which raises the possibility of confounding factors having a greater influence on the results. This intervention incorporated aspects of the MI approach into each of the 5 A steps. Overall this study demonstrated a significant effect on changing almost 20% of the women's smoking habits, which compares favourably to international studies.³³

This study suggests that the 5 As, combined with the guiding style of motivational interviewing, can be used successfully for smoking cessation in an antenatal care setting in South Africa. However unanswered questions remained as to whether it could be applied to the other risk factors associated with NCDs in a primary care setting, and whether it could be delivered by other primary care providers.

Apart from the possibility of applying the approach to a wider range of behaviours, we also needed to know whether nurses and doctors could deliver such a counselling role in our particular primary care setting. Although general practitioners in other settings are known to be well placed to deliver BBCC because of their ability to develop doctor-patient relationships characterised by trust and continuity, this is not usually the case in our busy public sector.¹ Nurses are similarly handicapped, but are often closer to the community served and likely to speak the local language.³⁴ Patients prefer to be counselled by a person with the ability to respond to their health concerns, someone who they can trust and rely on, regardless of the professional role of the counsellor. Empathetic counsellors who have the ability to be sensitive to individual circumstances, and can incorporate the patient's personal beliefs and concerns into the process are more successful at facilitating behaviour change.³⁴

Most of the research on training PCPs in BBCC is from high- income countries, and involves training primary care doctors, nurses or other allied health professionals in these skills. However, in many LMIC like South Africa, lay counsellors have also been integrated into the health care system to expand capacity for service delivery. Lay counsellors are people who do not necessarily have formal professional or tertiary medical education, usually they are from the community they work in and share the same language and culture. Local studies show that lay counsellors may be a viable alternative to primary care doctors and nurses, to provide counselling in low resourced areas.^{28,33,35} However most of these studies investigated their ability to deliver counselling for either group diabetes education, or individual counselling for ARV adherence, mother to child transmission of

HIV/Aids and risky sexual behaviour.^{24,30,35} To our knowledge, no study has investigated the ability of trained primary care doctors and primary care nurses to deliver counselling on all four lifestyle behaviours related to NCDs. This research therefore aimed to investigate whether nurses and doctors were able to successfully incorporate BBCC into their clinical practice in our context.

2.8 ASSESSMENT

The delivery of the 5 As can be assessed as part of quality improvement cycles or as part of research studies. Depending on the purpose of the assessment, information can be obtained from various sources, such as medical records, clinician and patient reports or direct observation.³⁶ For research purposes, direct observation via video or audio recording is considered to be the golden standard. Not only can direct observation contribute greatly to the understanding of the underlying communication between provider and patient, but it can also be of great value in designing, developing and evaluating training programmes.³⁶ To our knowledge, a standardised tool for direct observation of the 5 As is not widely used mainly because of the cost and complexities involved.

On the other hand, several tools are described which can be used to measure the quality of MI. However, to use most of the tools, coders have to have a solid understanding of MI. Although the concept of MI might be relatively easy to understand, using it to a high level of proficiency is not easy, and coding in general requires someone with prior experience, a sharp ear and an analytical mind. Some of these tools include the Motivational Interviewing Target Scheme (MITS 2.1)³⁷, Behaviour Change Counselling Index (BECCI)³⁸, the Motivational Interviewing Skills Code (MISC)³⁹, and the Motivational Interviewing Treatment Integrity tool (MITI 3.1)⁴⁰. Each tool has been purposefully designed, and each has advantages and disadvantages for use in specific contexts.

The MITS 2.1 is a relatively new tool, that was developed for use in shorter consultations (<20 minutes), which do not focus on one single consultation, but on a number of consultations from one particular practitioner (up to 30-40). This total set of samples is then used as the basis to screen how consistent his/her professional behaviour is with MI. While this might have been a useful tool for BBCC evaluation we did not anticipate having multiple recordings from each practitioner at each time point in our intended study.

The BECCI is a tool that uses a checklist to measure practitioner competence in behaviour change counselling, an adaptation of MI suitable for brief healthcare consultations. It was designed to help trainers evaluate skills acquired in training by examining recordings of consultations. The tool is useful in evaluating training, but there is little published use of the tool in research studies, which made us wary of relying on this tool. The researchers had also previously attempted to use the BECCI in other projects and found it conceptually less clear than the MITI.

The MISC was developed by Bill Miller, one of the founders of MI, and it pioneered the use of two measures, the global and behavioural codes. The tool is based on the psychotherapy process that

the developer was trained in, but it does not measure the quality of MI. The MISC has several disadvantages, for instance, it is tedious to train coders, mainly because it consists of forty three codes, coders needs three passes to code one recording, and to obtain inter-rater reliability is very difficult. Following on from the MISC the MITI 3.1 was developed from factor analysis from the MISC.

Over the years, the MITI 3.1 has become an established research instrument for measuring the quality and effectiveness of MI, with more than 389 citations in scientific literature from the original MITI 3.1 article. It is a cost effective, focussed tool that has been used to measure competence in entry level MI in a variety of settings, including research in the local primary care setting.^{24,35} The tool differentiates between practitioners with different levels of competence as well as between the guiding style of motivational interviewing and the directive style of advice giving. It can be used to give clinical feedback on performance, but it has some disadvantages. One of the disadvantages of the MITI 3.1, is its limited ability to measure advanced skills in MI. As the MITI 3.1 can be used to evaluate brief sessions (although ideally should be 20 minutes), had been used in the local context previously and had the best track record as a research instrument it was considered the best choice out of the available options for assessing MI skills in our study.

The MITI 3.1 was recently revised (after the data reported in this thesis was analysed) to eliminate details in the coding system that do not inform us of the quality of MI, to add codes that better indicate quality, and to increase the instruments ability to measure support of autonomy. The major change from the MITI 3.1 to the MITI 4⁴¹ is the shift in where the focus lies, for instance in the MITI 3.1 the client talk was ignored, whereas with the MITI 4 clinicians focus more on the clients' talk. The MITI 4 was developed to improve measurement of the quality of MI in clinical and research applications, across a variety of settings, such as primary care settings. The MITI 4 was developed to be consistent with the new MI 3 where possible, but it diverges from MI 3 in some aspects, for good reasons. For instance, it is now recognized that open-ended questions do not predict the quality of MI delivery, and are not useful in predicting if someone is getting better or not at delivering MI. Although measuring the amount of open questions, is therefore considered to be irrelevant, it is still necessary to teach it. Other changes include the measurement of affirmations. Offering only affirmations is sometimes also referred to as cheer leading, and it is not considered to be good MI practice. For instance, in the MITI 3.1 a person could be awarded good scores by just affirming, and this has been adjusted in the new MITI 4. Also the instrument is most useful when the target behaviour is clear, which means that with the MITI 4, the clinician needs a good idea of the target behaviour to be able to engage, focus, evoke and plan. Another important issue is that it is only to be used when coding audio recordings, as it is not intended to be used when coding scripts. Coders need to use at least 20 minutes segments of a random sample of a recording if it is to be used for clinical feedback. It is therefore clear that although the MITI 4 has been developed to improve MI quality measurement it has not yet been shown reliable for BBCC.

2.9 CONCLUSION

In this chapter I argued for the scientific value of the research by giving an overview of the effectiveness of BBCC, the applicability of this in the primary health care setting in South Africa, what has been tested in our setting in relation to this, the outcome of this, and what this research aims to add to the body of knowledge. I discuss behaviour change theories, as well as the skills and approaches that can be used, how these have been applied, and measured with different tools in different settings.

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CHAPTER 3

This chapter contains the four articles as follows:

- 3.1 **Article 1:** A situational analysis of current training for behaviour change counselling amongst primary care providers in the Western Cape, South Africa.
- 3.2 **Article 2:** Development of a training programme for primary care providers to counsel patients with risky lifestyle behaviours in South Africa.
- 3.3 **Article 3:** Evaluation of a training programme for primary care providers to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa.
- 3.4 **Article 4:** Evaluation of primary care providers experiences of a training programme to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa

3.1 Article 1:

A situational analysis of current training for behaviour change counselling amongst primary care providers in the Western Cape, South Africa.

This article was published in the African Journal of Primary Health Care & Family Medicine. 2015;7(1), <http://dx.doi.org/10.4102/phcfm.v7i1.731>

3.1.1 INTRODUCTION

The burden of non-communicable chronic diseases (NCD) is predicted to increase worldwide due to the ageing of populations, urbanisation, and the globalisation of underlying risk factors. The rising morbidity and mortality related to NCDs has major implications for the delivery of acute and chronic healthcare services.¹

The risk factors associated with NCDs have been clearly identified through international research and have been confirmed locally.^{2,3} Smoking, excessive alcohol consumption, physical inactivity and unhealthy diet are the key modifiable factors contributing to morbidity and mortality from NCDs.⁴ In South Africa, the burden of NCDs disproportionately affects the socio-economically disadvantaged and places increased demands on the public sector primary care services.³ Improving risky lifestyle behaviours is an important approach to decreasing health disparities and for more cost effective utilization of scarce resources in the public health sector.

Health care providers can play an important role in counselling and supporting patients with lifestyle risk factors, or an established NCD.³ Patients have frequent contact with health care professionals, who are perfectly positioned to provide counselling, and they are also viewed as reliable sources of information by patients. The best interface for this counselling in SA would be within public sector, primary health care services, as this is where the majority of the population encounters the health care system on a regular basis.⁵

Health services in low/middle income countries, like South Africa, are based on a model of treating acute episodic illness, and are not well organised for the prevention and management of NCDs. Counselling and education about risky lifestyle factors is usually inadequate.¹ Until recently the prevention of these lifestyle risk factors received little attention in South Africa's health related priorities.⁶

Recently, however, the need for healthcare provider training in evidence-based lifestyle interventions, both at an undergraduate level and as part of continuing professional development, has been acknowledged by the National Department of Health in their strategic plan for NCDs.⁷ In

line with WHO recommendations, the strategic plan prioritises cost-effective and feasible interventions to address the NCD epidemic.⁸ Brief behaviour change counselling in primary care is recommended for all four risk factors. Training health care providers at all levels in effective communication skills is seen as necessary, and they are identified as having a particularly important role to play, given the potential for prevention and control of NCDs at primary care level. The need to shift to a patient-centred approach to care, which emphasises the importance of actively engaging the patient in decision making about their health, is stated as an objective in 're-orientating' the primary healthcare system to effectively address NCDs.^{7,8}

To date, there has been very little research assessing the capacity of health care providers in South Africa to deliver behaviour change counselling, however these few studies suggest that counselling is inadequate.^{5,9} Although it is primarily nurses who provide behaviour change counselling in the public sector, nurses were found to have limited knowledge of how to counsel patients on NCD risk factors.⁵ Private general practitioners have also been found to struggle with documenting and counselling overweight or obese patients.⁹ Two other local studies, which investigated the knowledge, attitudes and practices of obstetricians and midwives respectively, around the delivery of smoking cessation counselling to pregnant smokers, showed very low levels of counselling practice and knowledge of best practice methods among both categories of health care providers.^{10,11}

This poor performance amongst practitioners may reflect a lack of training in behaviour change counselling skills. The aim of this study, therefore, was to conduct a situational analysis of the current training courses for primary care nurses and family medicine registrars in the Western Cape.

3.1.2 RESEARCH METHODS AND DESIGN

Study design

This was a qualitative study that made use of both individual in-depth and focus group interviews. These two components are described separately below.

Setting

This situational analysis forms part of a larger research project that focuses on the development, implementation and evaluation of a training intervention for primary care providers on brief behaviour change counselling, and assessment of the provider's competency in delivering this intervention.

In the Western Cape Province doctors are trained at Stellenbosch University and the University of Cape Town. After undergraduate studies, internship and community service doctors can choose further postgraduate training. Postgraduate training for primary care is via a 4-year Masters of Medicine degree in family medicine. Basic training for nurses is offered by universities (such as the

University of Western Cape) and nursing colleges. After basic training nurses can qualify as a clinical nurse practitioner through a 1-year Higher Diploma course, which is offered by Stellenbosch University and the Western Cape College of Nursing.

Primary care services are offered via a network of fixed and mobile clinics as well as community health centres throughout all the health districts in the Province. Patients with NCDs are mostly managed in these facilities. At clinics the service is offered by a nurse with periodic support from a doctor. At health centres service is also mainly offered by nurses, but with more involvement from doctors as well as a broader multidisciplinary team that might include health promoters, occupational therapists, physiotherapists and pharmacists.

The researcher herself is a qualified family physician and spent many years working in private general practice before joining the Division of Family Medicine and Primary Care. She developed an interest in behaviour change counselling through previous research on general practitioners counselling overweight and obese patients. She found it challenging to counsel patients to lose weight, and thought that it may be due to a lack of training in these skills during her undergraduate training. So she conducted a study to determine whether the implementation of a treatment protocol for the assessment of overweight patients could improve the doctors counselling skills.⁹ Despite the prevalence of overweight or obese patient seen at the clinic, the research showed that after the intervention, the general practitioners still failed to counsel overweight or obese patients. This prompted her to think about possible training interventions that could improve the counselling skills of primary health care providers.

Study population and selection of participants

The study population were selected by using a purposive criterion-based sampling procedure. The criteria used to select interviewees were:

- Primary care doctors working in the public sector,
- Primary care nurses working in the public sector,
- Training programme coordinators involved with the training of primary care doctors and nurses in the Western Cape
- Clinical trainers involved with the training of primary care doctors and nurses in these programmes.

These criteria were intended to elicit the viewpoint of primary care providers working in the public sector with regard to their current practice and previous training as well as the viewpoint of the trainers and training programme co-ordinators on the strengths and weaknesses of current training.

Individual semi-structured interviews were intended for the training programme co-ordinators and clinical trainers, while focus group interviews were planned for the primary care providers. The interviewees are described in detail at the start of the results section.

Data collection

The researcher performed and audio-taped in-depth interviews with all the key informants listed above. Interviews were conducted in the key informant's choice of language, either Afrikaans or English. The researcher used an interview guide, and skills such as open ended questions, reflective listening, summarizing, and elaboration to conduct the interview. Topics discussed were the current teaching modules, if any, on behaviour change counselling, prior experiences and beliefs about the effectiveness of such training, attitude towards the introduction of a new training module, and their beliefs about the long term effect of current training in clinical practice.

The focus group interviews were also conducted by the researcher and audio-taped. The interview with the nurses took place at the clinic and the interview with the registrars at the university campus. The nurses preferred to be interviewed in Afrikaans and the registrars in English. During these interviews the researcher used an interview guide to explore their successes and failures with counselling, their perceptions of factors that enabled or obstructed counselling, and their perceived effectiveness/competency in delivering counselling. Participants were also asked about prior formal training received, and perception of their knowledge on NCD's.

Data analysis

Interviews were transcribed verbatim and analysed using Atlas-ti software using the framework approach.¹³ The framework approach to content analysis involves the following steps:

- Familiarisation: The researcher listened to the tapes, read the transcripts, and listed recurrent issues or ideas that emerged from the data.
- Construction of thematic framework: The researcher organised these issues and ideas into a framework that was aligned with the objectives of the study. In Atlas-ti this related to a list of codes organised into families.
- Coding: The researcher applied the thematic framework systematically to all the data by annotating the transcripts with the codes using Atlas-ti.
- Charting: All the data from the specific codes included in a family in Atlas-ti were brought together in one document or chart.
- Mapping and interpretation: The researcher used the charts to interpret the data for themes and look for any associations or relationships between themes.

Ethical considerations

This study was approved by the Health Research Ethics Committees (HREC) at Stellenbosch University (Reference number: N11/11/321). Key informants and focus group participants gave

written consent. The confidentiality and privacy of all interviewees and participants were respected in data analysis and reporting.

3.1.3. RESULTS

Key informant interviews were conducted with the programme coordinator and senior clinical trainer involved in the campus-based training of nurses for the Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care at Stellenbosch University (this course is not offered at the University of Cape Town). Only the programme coordinator for the training of family physicians at Stellenbosch University was available for interview. The two senior clinical trainers responsible for campus-based behaviour change counselling training with registrars at the University of Cape Town and Stellenbosch were interviewed. In addition the senior clinical trainer involved in workplace-based primary care training of registrars in the local East Metro Training Complex at Stellenbosch University was interviewed.

Focus group interviews were conducted with nine nurses working at a primary care clinic, situated in a low socio-economic area of the Cape Winelands. The researcher had access to the nursing staff at this clinic, as she had been involved with the training of undergraduate medical students on a weekly basis, at this facility, for the last few years. The nurses were established primary care providers, and were trained in the Western Cape. They were familiar with the community, and had been working at their facility for more than a year. All nurses were interviewed to get an overall view from each level of trained nurse. Four of the nurses were clinical nurse practitioners, four were staff nurses and one was an assistant nurse.

The second focus group interview was with a group of eight registrars in family medicine at the University of Cape Town. The registrars ranged from first year to third year students, had previously been working as junior doctors and received their undergraduate training at a variety of different universities.

All the nurses were Afrikaans speaking, and preferred to be interviewed in Afrikaans, whilst only some registrars were Afrikaans speaking, and therefore the registrars were interviewed in English. At the time of the research it was logistically difficult to conduct a focus group interview with Stellenbosch registrars.

Overall 23 people were interviewed, which included six key informants, nine nurses working in primary care and eight doctors training in family medicine and primary care as described in the methods. Overall 15 of the respondents were female and eight were male and ranged in age from 24 to 56 years.

Both doctors and nurses believed that primary care providers (PCP) should be skilful in their ability to help patients make difficult decisions about changing risky lifestyle behaviours:

'Everybody needs to be able to do it and do it effectively.' (Nurse Programme manager)

'I think it is a crucial part of the skills set that any family physician should have.' (Family medicine programme manager)

Although it was seen as an integral and important part of a PCP's competencies, nobody expressed confidence in the current training or its impact on practice in the clinical setting:

'So we haven't found a form of behaviour change counselling that really works and can work at scale in the context of our primary care scenario, where things are very pressurised you know and with nurses it is a huge challenge.' (Family medicine programme manager)

'The current training programmes do not meet the needs of the country.' (Nurse Programme manager)

'We have not gone as far as changing the clinical picture.' (Family physician)

The current training of registrars was seen as mainly theoretical and did not enable the development of practical skills. Time constraints, due to other competing issues in the curriculum, resulted in a lack of continuity throughout the curriculum and difficulty for PCPs to fully integrate new skills into clinical practice. Registrars felt that the limited time spent on training in behaviour change counselling led to the impression that it is of lesser importance:

'So I am very concerned about how little time they actually have and you know, what they are picking up and then even more concerned about whether they will practice in any of that skills, in a way that will encourage you know their on-going learning.' (Family medicine programme manager)

'We just had one session which makes it feel almost as if it's of lesser importance. It's ja, so and we're always told you know, you need to counsel your patients its important and I don't think we get taught enough about it undergrad and postgrad.' (Registrar)

Nurses on the one year diploma course had only seven contact sessions of two hours allocated to the module: Principles and Processes of Primary Care, and the training in this module focused on breaking bad news, substance abuse and intimate partner violence. During this module there was virtually no training or assessment of behaviour change counselling skills. They did role play and audiotaped a normal consultation with a patient and received feedback from the lecturer on general communication skills. Final assessment of their communication skills involved a single role play that did not necessarily focus on counselling. Nurses were thought to be starting at a much lower level in terms of their prior communication skills and the nursing consultation tended to be more task orientated, which made it difficult for them to adopt a holistic patient centred approach. Some of the student nurses had worked in hospitals for years, and had never been exposed to the primary care setting. During their training they were not taught knowledge related to risky lifestyle

behaviours for NCDs, but rather a general approach to communication. It was apparent that lecturers did not expect nurses to be competent after the training, and that there was no follow up after completion of the training programme:

‘What tends to happen is that because it is so short and because some of them start with a very low baseline, it is difficult to get them to significance.’ (Nurse Programme manager)

‘Remember our students have only seven contact sessions in which we need to teach them everything. You must understand that everybody wants their specific thing to be concentrated on and we only have seven lectures.’ (Nurse Programme manager)

‘I don’t teach them to become professional counsellors at all, it’s teaching for concepts.’ (Nurse Programme manager)

Family medicine lecturers commented on an organisational culture in the health services whose values were often incongruent with the style required for behaviour change counselling that is respectful, empathic and collaborative. Lack of support from clinic managers for behaviour change counselling, and modelling of an authoritarian and directive style of communication, made it challenging for PCPs to implement any training they received:

‘How do you get a health worker to behave in a guiding style, in an organisation that manifests values almost directly opposite to those values you know?’ (Family medicine programme manager)

Registrars at both universities were exposed to communication skills training, including motivational interviewing, early in their four year programme. The training was over a 3-month period in year 1, as part of a consultation module. This actually involved a 1-2 weeks section where they studied basic motivational interviewing (MI). This involved several readings, watching a video that modelled the counselling approach and a written assignment that reflected on attempts to counsel behaviour change at the end of the module. During the second year, registrars at Stellenbosch attended a one day workshop on brief MI and registrars at Cape Town developed and practiced consultation skills by using audio taped role plays with no specific focus on counselling. After the more formal teaching in the first and second years there was no specific requirement for these counselling skills to be observed or reinforced as part of their work-based training and portfolio assessment, although the portfolio does require observation and feedback on consultation skills in general.

At both universities they were assessed in year 4 on their ability to perform behaviour change counselling in a simulated consultation, which is one out of four such consultations in the final examination that all focus on communication skills. In the new national exit exam for family medicine, organised by the College of Family Physicians, candidates are required to perform three observed consultations and the assessment tool includes an assessment of their general

counselling skills. This section of the tool however defines counselling more in terms of general health education than behaviour change counselling:

‘So what they really have taken out, and what is actually incorporated into their consultation is not known.’ (Family medicine programme manager)

‘We have not gotten as far as saying we want to be absolutely sure that every registrar is competent in that skill.’ (Family medicine programme manager)

‘It’s really difficult to assess.’ (Family physician)

Although feedback is considered an important factor in developing and maintaining a new skill, once registrars and nurses were in actual clinical training practice, no feedback on their skills was available, mainly because most supervisors had not received training in specific counselling skills:

‘How confident are you at using it and if you don’t get feedback on your success at using it, it is very difficult to develop enough confidence to carry on trying to use that skill.’ (Family medicine programme manager)

‘They’re from all over the country and so we don’t know, they pass the programme, they get their diploma and they’re out of here.’ (Nurse programme manager)

‘It is one thing to be taught how to do it, it is another thing actually changing your practice to actually doing that. It is much easier probably for people to just go back to doing things the way they have always done them.’ (Family medicine programme manager)

‘In terms of the registrar’s supervision, absolutely no idea if any of the supervisors do any teaching around brief motivational interviewing at the training sites.’ (Family medicine programme manager)

Doctors expressed the need for feedback in future training:

‘I think it will be a big help if we have to counsel someone with a supervisor or somebody or a lecturer watching us and giving feedback.’ (Registrar)

‘When you are trying to use a new technique which you have admittedly only had six hours training in, how confident are you at using it and if you don’t get feedback on your success at using it, it is very difficult to develop enough confidence to carry on trying to use that new skill.’ (Family medicine programme manager)

As a result doctors and nurses lacked confidence in their counselling skills, and did not feel equipped to counsel effectively:

‘So it is not an easy procedure to verbally tell someone you must stop smoking.’(Nurse)

‘I cannot just tell a person to quit smoking; there is no way that you can just quit smoking.’ (Nurse)

‘The only counselling skills that I know is like HIV counselling skills or the counselling of the dying patient, but not really the steps of making someone stop smoking.’(Registrar)

‘We have been taught but you don’t actually, I don’t think I’m confident enough to do it in the right way, I’m doing it in the way that I feel is best.’ (Registrar)

Nurses did not recollect being trained to counsel a patient to change risky behaviour, and based their current counselling methods on their own past experiences. Counselling was viewed as part of the consultation and not a specific technique. Nurses used a more directive style, where asking and informing patients about the risk factor seems to be the dominant skills used. There was a perception that one had to use a directing style if you had limited time. Most of the knowledge used during this counselling was reportedly obtained from magazines, the radio and newspapers:

‘We have taught ourselves with experience.’ (Nurse)

‘It’s part of how we anyway see a patient.’ (Nurse programme manager)

‘There is no specific technique actually we just talk’ (Nurse)

‘I ask are you smoking, are you drinking, then I try to convince them that it is not good.’ (Nurse)

‘I ask them a question and I inform them what the risks are towards that. For example, I ask do you smoke.’(Nurse)

‘To do it all in five minutes you have to be direct.’ (Nurse)

Registrars tried to involve the patient in decision making, but still relied on information giving when counselling, using a brief 1-2 minute intervention as part of the consultation. Interestingly both nurses and doctors felt more comfortable to counsel a patient on diet and exercise than to stop or reduce tobacco smoking or drinking alcohol. There was a perception that you would be wasting your time trying to counsel someone on tobacco smoking or alcohol use:

'I make them aware of what I think needs attention and we have learnt with like getting the patient to participate in the decision making and sometimes I will ask so what do you think you can do differently.'(Registrar)

'So it's easier to tell someone to eat salad, he will more willingly eat salads and tomatoes and stuff like that, than you telling him to quit smoking.'(Nurse)

'I feel sometimes diet, people can change and exercise, but smoking sometimes I just feel like someone's going to smoke anyway.' (Registrar)

Nurses felt overwhelmed in a situation where they were expected to counsel, lacked practical skills, had time constraints and pressure of workload, lacked appropriate support materials, and felt that patients were likely to be irresponsible anyway, despite knowing the risks:

'They have the information but they are still smoking. They see it on television, they see it on the cigarette packet, they see it in the newspaper, in a book they are reading and we tell them. They still smoke.' (Nurse)

'It will be much easier with what you say to have colourful pictures, because there are people who can't read.' (Nurse)

'So you need to give them something to read about the danger of smoking and all that stuff, it would be much better.' (Nurse)

'How can we do all of this in five minutes?'(Nurse)

Despite these barriers, registrars remained sympathetic toward patients' circumstances, but also felt that poverty made it difficult to adopt a healthier lifestyle:

'A lot of times our patients lives are just so miserable, like they are just so poor and so like the areas they live are such bad areas and for example if someone smokes then sometimes I feel like ag shame just let them smoke like it's their only little pleasure.'(Registrar)

'You can't tell a diabetic that doesn't have an income and three children with only child support grants they must have a low GI [glycaemic index] diet. I mean they eat what they can to stay alive.' (Registrar)

Doctors reported poor continuity of care, poor record keeping, lack of a standardised approach, language and cultural issues as additional difficulties. Both doctors and nurses expressed difficulties to counsel a patient when they themselves were smokers or overweight. Doctors felt that nurses had a better understanding of the patient's language and culture because they often stay in the community, but sometimes lacked the knowledge on risk factors and NCDs when counselling. This also led to the problem of PCPs giving conflicting or contradictory messages:

‘Continuity of care, we never see the patient twice so you can’t really say let’s talk a little bit today and then next week we will continue...’ (Registrar)

‘You don’t always see the notes, or recordings about previous brief things are not always in the notes.’ (Registrar)

‘They understand a person’s culture better and when you work with them although sometimes a problem is also that sometimes their knowledge might not be adequate enough and then we get a problem where they say one thing you say another.’(Registrar)

Doctors did not think counselling alone would be sufficient to change a patient’s behaviour and that it needed to be combined with giving printed patient information material. They also felt that patients preferred to see a doctor and trusted their advice more than the nurse, maybe in part because of the directive approach mostly used by nurses:

‘If it comes from the doctor’s mouth then it’s like no this is definitely the correct thing I’m not listening to the nurse. Unless they’ve actually bonded with the nurse or they have had a good experience or with someone that’s very patient-centred, but from my experience patients tend to prefer doctors.’(Registrar)

‘I think they remember more if you actually tell them rather than say here’s the pamphlet, go read up on hypertension and diet or something.’(Registrar)

Nurses felt that they should target young people in future because old people are set in their ways and less likely to change. They reported that counselling for smoking cessation in future could be more successful if the patients are prescribed medication to assist them in changing their behaviour, but unfortunately not many could afford it:

‘Our major problem is that we don’t start with the right people. We must start with the children.’ (Nurse)

‘So you must start from where you started smoking, people from twenty or between twenty five or wherever. If you are fourteen you smoke because it is fun, your friends are smoking, but if you are smoking at the age of twenty, you smoke because you smoke.’ (Nurse)

‘Patients that really want to stop ask the doctor to write a prescription that they get at the private chemists and it is a bit expensive but those that are given prescriptions, were successful and they wanted to stop.’(Nurse)

For nurses, counselling skills need to be integrated into their current practice in order to make the time available for counselling more skilful and effective. Trying to implement counselling as an additional task would not be successful:

‘You have to incorporate whatever you are doing into what the nurses are already doing, because you’re not going to get it done separately. They don’t have the time or the interest, and how to, and you know every time you add something to a nurse’s workload they tell you, okay so where am I going to fit this into my day?’ (Nurse programme manager)

A simple unified structured approach based on the best evidence available should be adapted and implemented in the primary care system. Future training should be aimed at improving supervisors and other PCPs counselling skills at undergraduate and postgraduate levels. Competence after training should be assessed and the importance of BBCC needed to be stressed by both policy makers and managers at the clinic level:

‘We must seriously look at integrating some of these things that only happen at the end and at the very beginning, integrate that far more into a form of a workplace based assessment throughout the four years.’ (Family medicine programme manager)

‘We need much more regular training and much more regular assessment.’ (Family medicine programme manager)

‘So having a simple structure that people can remember and apply almost generically to behaviour change issues that, could actually be highly beneficial in getting people to do this.’ (Family physician)

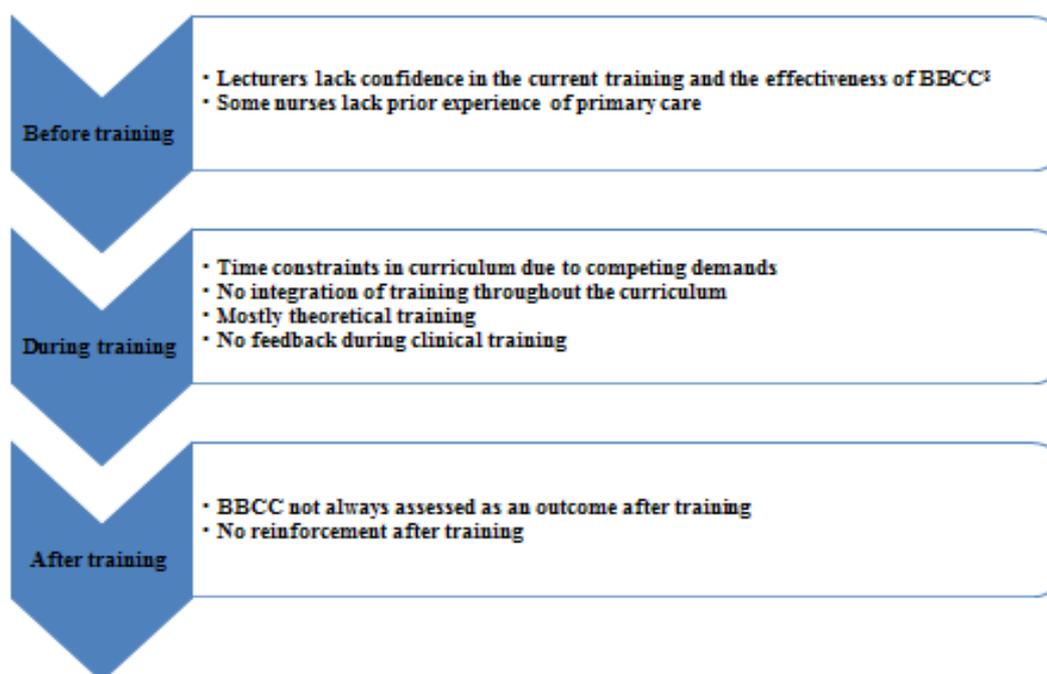


Figure 3.1: Current training difficulties [§] BBCC, brief behaviour change counselling

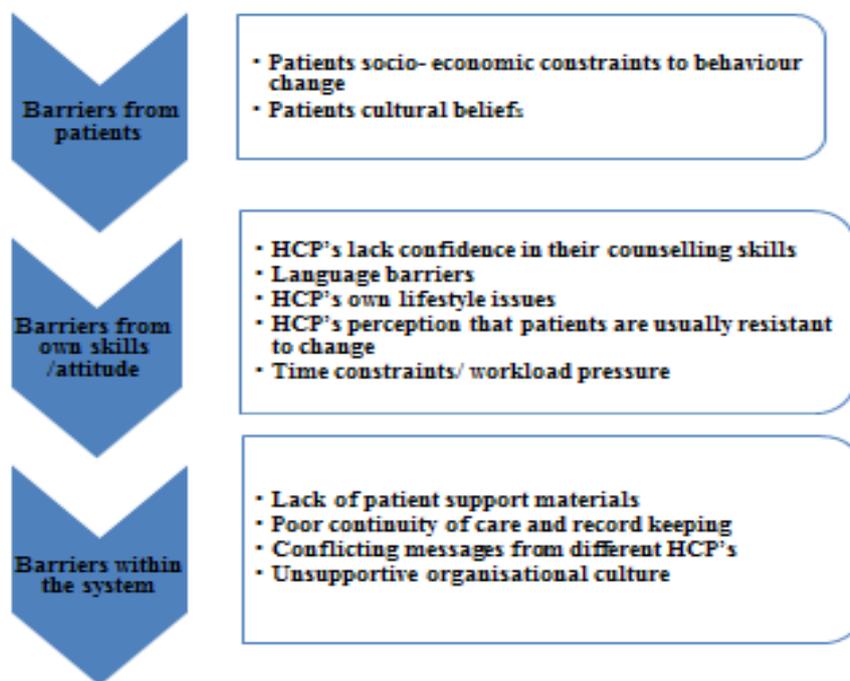


Figure 3.2: Primary Care Providers barriers to behaviour change counselling practice
 § HCP's, health care providers.

3.1.4 DISCUSSION

Training of primary care nurses and family physicians in BBCC is not designed to really build competency. Training programmes seem to be promoting the theory of lifestyle modification, but are not delivering on the practical skills. The opportunity to practise key skills, and receive constructive feedback of performance is largely missing, and therefore PCP's do not transfer these skills to clinical practice. As a result, PCP's lack confidence in their ability to effectively counsel patients. The current difficulties with training are summarised in Figure 3.1.

The Department of Health's recommendations to revitalise primary health care focusses on improving primary health care providers capacity to counsel effectively, by teaching PCP's to deliver personalised, patient centred behaviour change counselling.⁷ Traditionally PCP's rely mostly on the directive style when counselling patients on behaviour change, resulting in resistance from the patient, and frustration for the PCP.^{5,14,15} A patient centred approach to counselling patients on lifestyle change, out performs a directive, advice giving approach in 80% of studies.¹⁶ Involving the patient in decision making is essential in order to create a collaborative, culturally relevant, and efficient interaction, especially in our diverse context.

Brief behaviour change counselling (BBCC) is built on the foundation of a patient centred style and incorporates a guiding style derived from motivational interviewing.¹⁷ It is designed for use in primary health care settings, with brief interactions in mind.^{4,17} This study echoed other research,

which showed that many programme managers and PCP's are unaware of the evidence in support of BBCC and are sceptical about its effectiveness.^{5,18,19,20} International evidence exists to show that BBCC can be delivered by a range of health care providers with minimum investment of time, in a variety of settings, for patients of different ages, genders and ethnicities. Health care providers from different training backgrounds, working in different settings, devoting a small amount of extra time with their patients, building a patient centred relationship, can expect 10-15% additional improvement in patient behaviours across a wide variety of behaviours.^{21,22} In fact, any improvement in the counselling skills of front-line PCPs might be useful in responding to the ongoing burden of disease from both communicable and non-communicable disease, that significantly impact the most marginalized individuals. This type of patient centred approach could be used to improve patient communication in general health care. This evidence can possibly be used to increase PCP's awareness of their potential role and to build their confidence as well as to sensitise programme managers and decision makers to the potential value of BBCC.

The relevance and applicability of BBCC has not been widely assessed in low and middle income countries settings. The first attempt to apply BBCC skills in a primary care setting in a developing country such as South Africa in 2004, demonstrated that it has great potential for GP's.¹⁷ They felt less frustrated with behaviour change consultations and reported to have more skills in counselling for behaviour change.¹⁷ During 2008, 38 lay and nurse counsellors were trained to counsel pregnant mothers about behaviour changes related to the prevention of mother to child transmission of HIV in sub-Saharan Africa.²³ This research developed recommendations to guide the development of future training programmes in this setting. One of the key messages was to tailor-make the training according to the PCP's baseline communication skills. Other recommendations included avoiding reinforcing problems, deficiencies and failures of the counsellors, but rather focussing on successes and aim to build self-confidence.²³

Primary care providers in practice report a number of barriers to the delivery of BBCC such as a lack of time, lack of confidence in their ability to counsel and a lack of supportive materials for patients. Many of which were also reported in the results above as shown in Figure 3.2. There was a perception that counselling was ineffective, with poor patient adherence, and language barriers were also amongst the main difficulties in counselling. These barriers echo the findings of similar studies in the same setting.^{5,20}

Even if current training programmes are adapted and optimised, we are still faced with numerous challenges in our public, primary health care system that may be a barrier to PCP's ability to engage in patient centred counselling. A recent study in the Western Cape reported that three-quarters of junior doctors, working in community level public health care facilities, are suffering clinically significant burnout. Emotional exhaustion and de-personalisation may diminish PCP's commitment to engage patients in patient-centred counselling.²⁴

Future training could optimise training outcomes by targeting PCPs with the most potential to provide successful BBCC. Empathy has been identified as one of the essential skills valued most by patients, in communicating with a health care provider, who uses a patient centred approach.^{25,26} PCP's low in empathy show indifference or active dismissal of the patient's perspective, whereas those high in empathy are curious, and spend time to explore the patients story. Patients experience this attitude as positive, they feel listened to, and this leads to an increased possibility of change.²⁶ Recent international research suggested that training can make a significant difference in primary health care providers' empathic expression during patient interactions.²⁵ Screening before training, and offering additional input accordingly, may be necessary to optimise gains in patient centred communication skills training for counsellors with lower baseline empathy.²⁵

The development of future training programmes should take note of current counselling barriers and aim to reduce those barriers that can be addressed through training skills. Training can teach communication skills, and change the PCP's attitude about the effectiveness of counselling.^{15,25,27,28} Doctors with good communication skills identify patient's problems more accurately; have greater job satisfaction and less work stress.²⁷ The inclusion of training modules on communication skills for primary PCP's is therefore essential.^{6,15,18}

Group education, could also be explored as a possibility to deal with some of the barriers in primary health care settings with limited resources. Health professionals regard group interactions as the most practical approach to counselling in our demanding primary care clinic setting. The first trial in an African context, on the effectiveness of a group diabetes education programme in the Western Cape, demonstrated that health care promoters have the potential to deliver effective group diabetes education.¹⁶ A combination of both structured and systematic group education together with more ad hoc individual BBCC could be a model to explore further.

Training has very limited impact on practice if there is no follow up support and feedback.^{23,29,30} Offering feedback on real consultations, could ensure more effective transfer of skills after initial training.²⁷ Formative feedback is an essential part of a supervisor's role and including observation of BBCC in the registrar's portfolio of learning (the portfolio is now a national requirement in South Africa, for entry to the college exams), could strengthen the training in this area. The portfolio requires direct observation of consultations with feedback and could require that some of these focus more on BBCC. However, supervisors should also be trained on the best evidence-based methods for BBCC. In-service training and on-going support can be effective in overcoming some of the barriers and improving clinician's provision of behaviour change counselling.^{18,23}

3.1.5 LIMITATIONS OF THE STUDY

Interviews were conducted by the researcher who is a family physician at the Division of Family Medicine and Primary Care at Stellenbosch University. Previous research conducted by the

researcher on general practitioners management of overweight /obese patients, could have negatively influenced her perception of the PCP's efficacy in counselling. The researcher has been primarily involved as the interviewer in all the interviews undertaken for this study, as well as the analysis and interpretation of the findings. The interview process, analysis and interpretation was however supervised by the other co-authors.

A possible limitation of the study was that a degree of convenience sampling was involved in applying the purposive criteria during the sampling procedure. It was convenient to interview nurses from the clinic where the researcher was teaching and to interview registrars who came together regularly as a group. It is possible that interviewing nurses from a variety of different clinics or medical officers not involved in postgraduate training might have revealed additional themes. Nevertheless the researcher triangulated data from different types of respondents (trainers, nurses and doctors), from different genders, ages, institutions and with different levels of expertise and qualifications. It could also be mentioned that inclusion of primary care providers from the private sector, such as general practitioners, might also have revealed different themes. However overall the results of the study are congruent with the findings of similar studies in the same setting.⁵

3.1.6 RECOMMENDATIONS

Based on the current training challenges identified by this study, future BBCC training programmes should aim to:

- Raise awareness of the evidence on the benefits of BBCC amongst primary care providers and decision-makers.
- Include the evidence base for BBCC in the training.
- Focus on the development of competency in BBCC, rather than the theories of behaviour change, or general communication skills. Include time to model and practice skills in the training.
- Reinforce the initial training provided throughout the rest of the programme.
- Ongoing, on-site feedback and supervision should be provided in the clinical training setting.
- Competency in BBCC should be summatively assessed as part of the programme.

Based on the barriers to BBCC in clinical practice the following recommendations can support the implementation in primary care:

- Provide patient education materials to reinforce and supplement BBCC on risk factors and key behaviours
- Encourage record keeping and continuity of care to enable follow-up of BBCC interventions
- Ensure that all relevant health workers are trained in BBCC and share the same understanding of lifestyle modification messages

- Develop an organisational culture that is patient-centred and which encourages learning and innovation so that BBCC is congruent with this culture

Future research in our setting will focus on the development and implementation of a training intervention for PCP on BBCC, based on the findings of this study and best practice models.

3.1.7 CONCLUSIONS

Current training on behaviour change counselling for primary care providers in the Western Cape is not sufficient to achieve competence in clinical practice. Primary care providers' current experience of counselling in practice tends to be discouraging and challenging, in view of the numerous barriers that they face. Revising the approach to current training is necessary to ensure that skills can be learnt and transferred to the clinical setting.

3.1.8 ACKNOWLEDGEMENTS

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3.1.9 COMPETING INTERESTS

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

3.1.10 AUTHORS' CONTRIBUTIONS

ZM interviewed, analysed and interpreted the qualitative data. BM and KE-M conceptualised and supervised the research process. All of the authors approved the final manuscript.

3.1.11 REFERENCES

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3.2 Article 2:

Development of a training programme for primary care providers to counsel patients with risky lifestyle behaviours in South Africa

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3.2.1 INTRODUCTION

Many countries, including South Africa, are reporting an increase in the prevalence of non-communicable diseases (NCD's) such as hypertension and diabetes. These NCDs have been linked to underlying risky lifestyle behaviours such as tobacco smoking, unhealthy diet, alcohol abuse and physical inactivity.^{1,2} Brief behaviour change counselling (BBCC), which is integrated into routine primary care, can be effective in helping patients change these risky behaviours.^{3,4,5} The importance of this has been recognised by the South African Department of Health in its National Strategic Plan for the Prevention and Control of NCD's.⁶ Capacitating primary care providers (PCPs) to deliver BBCC in primary care settings is recommended for all four risk factors.

It is feasible for BBCC to be effectively delivered by PCPs, who have both the opportunity and credibility to do so.^{3,4,5} Training can enhance PCP's efficiency and capacity to provide this counselling, provided adequate resources and support are available in the workplace.^{5,7} Most of the research that explores training interventions for PCPs to deliver this counselling is from developed countries, such as the USA, Australia and Canada.^{7,8,9} The few studies that have been undertaken locally, suggest that such training is currently inadequate.^{10,11,12}

PCPs face a difficult task in helping patients to change their risky lifestyle behaviours. In South Africa the experience of counselling in practice tends to be discouraging, because of the poor response of patients, and challenging because of numerous barriers. These include language barriers, lack of time, poor knowledge of lifestyle modification, inadequate counselling skills, lack of self-efficacy, and poor continuity of care. PCP's reported lack of confidence in their ability to help patients change and their scepticism about the effectiveness of lifestyle counselling may partly be a reflection of inadequate training in this area.^{10,11}

Recent situational analyses in the Western Cape showed that current training programmes on behaviour change counselling for PCPs are not sufficient to achieve competence in clinical practice.^{10,11} Training programmes were mostly theoretical and without the opportunity to practise key skills, and receive constructive feedback on performance. PCPs, therefore, were not confident to perform BBCC. Due to time constraints, training was not integrated throughout the curriculum,

and there was no reinforcement afterwards. The training outcomes were not assessed, and even lecturers were unaware of the evidence in support of BBCC, and had low confidence in the effectiveness of their training.¹¹ Therefore trainers and not just students needed training in BBCC.

Traditionally PCPs rely mostly on the directive style when counselling patients on behaviour change, resulting in resistance from the patient, and frustration for the PCPs.¹³ Changing the PCPs current style of communication could be challenging, and we realized that the training should focus not only on teaching PCPs a structure for BBCC and evidence-based knowledge of lifestyle modification, but also to transform their style of communication.

Capacitating PCPs to deliver BBCC in a skilful way that is integrated within the consultation is essential.^{3,4,14} This study aimed to address this need by re-designing the current training around a new model for BBCC that would offer a standardised approach to addressing different NCD risk behaviours, be realistic in terms of training time and resources, be feasible to perform in clinical practice, as well as evidence-based and effective.

3.2.2 AIMS AND OBJECTIVES

The aim of this study was to develop a training programme for PCPs that delivered a best practice BBCC method for patients with risky lifestyle behaviours and evidence-based information on NCDs. This paper focuses on the development of the training intervention and the evaluation of it in clinical practice will be reported on at a later date. Specific objectives were to:

- Design a best practice BBCC training programme to meet the needs of PCPs.
- Develop the structure and content of the training intervention, as well as the skills and resources needed to deliver this programme.
- Implement the training programme
- Evaluate and revise the training programme

3.2.3 RESEARCH METHODS AND DESIGN

Study design

Most approaches to instructional systems design reflect the ADDIE (analyse, design, develop, implement and evaluate) model, which uses a systemic problem solving approach to develop new training programmes.¹⁵ The ADDIE model may be particularly useful if the main focus of the new training programme is changing the behaviour of participants.¹⁵ The objectives above were based on the ADDIE model, which is also shown in Figure 3.3. The ADDIE model provided a systematic approach to the analysis of learning needs, the design and development of the training programme, its implementation and initial evaluation.¹⁵ The ADDIE process had also been previously used in local educational research and development of training programmes.^{16,17} The methods used to complete each step of the model are described below.

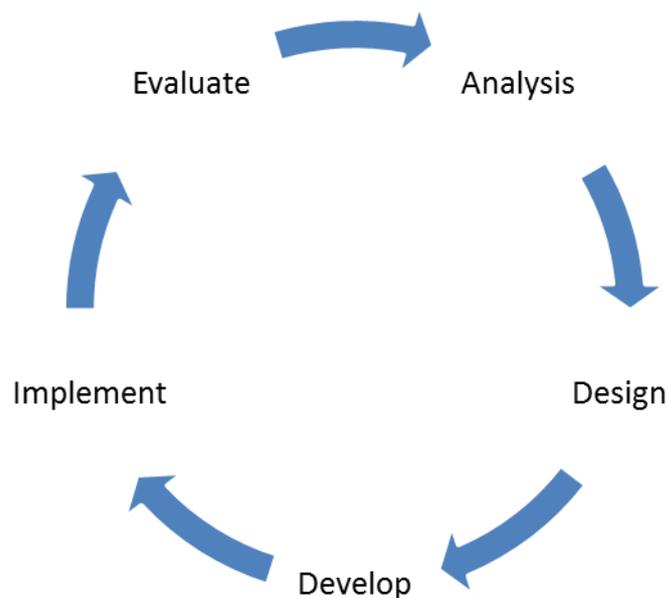


Figure 3.3: The ADDIE model for the design of training programmes

Setting

Eighty percent of the South African population make use of public sector health care facilities, particularly those with NCDs, which are amongst the commonest conditions seen in primary care.¹⁸ The majority of patients are seen by clinical nurse practitioners in either small clinics or larger health centres. Clinical nurse practitioners only receive an additional one year of training to cope with the wide range of problems seen in primary care. Clinical nurse practitioners are supported by primary care doctors, who usually have no additional postgraduate training. Therefore the PCPs targeted by this training programme were clinical nurse practitioners and primary care doctors.

The training programme was developed with the intention of initially implementing and evaluating it as part of the 1-year Diploma course (Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care) at Stellenbosch University, which focused on training clinical nurse practitioners and the 4-year postgraduate training programme in family medicine, which was aimed at doctors, at both the University of Cape Town and Stellenbosch.

Educational team

An educational team was created to collaborate on the ADDIE process and consisted of the three authors. The team combined expertise in motivational interviewing, adult education, NCDs, primary care research and brief behaviour change counselling.^{16,17,18,19,20,21,22}

ADDIE process

Step 1 Analysis

The situational analysis of current training and clinical practice for the target audience has been summarised in the introduction and published elsewhere.¹¹ This article reports on the remaining ADDIE process.

Step 2 Design

In the design stage the educational team developed a conceptual model and learning outcomes that were derived from the findings of the situational analysis and a literature review. The literature review searched PubMed, Google Scholar and local African journals for evidence on effective models of BBCC, as well as approaches to the design and implementation of training programmes.

Step 3 Development

The educational team then developed the structure and content of the training programme, learning activities and strategies, as well as the educational resources required. Care was taken to ensure that all of these elements were aligned with the design of the learning outcomes and conceptual model.

The educational team then prepared the actual content, for instance, power point slides, instructions for role plays and practical exercises, by drawing on existing materials and previous experiences in training motivational interviewing. This process also helped the team to determine which resources were available, and which needed to be developed or obtained.

The training programme that emerged from the design and development phases was presented to a group of programme managers, clinicians and trainers of family medicine and primary care at Stellenbosch University to obtain further input from experts in primary health care.

Step 4 Implementation

During 2012-2013 three groups of nurses and three groups of primary care doctors completed the training programme at Stellenbosch University.

Step 5 Evaluation

Feedback forms (see appendix) from the training courses during 2012-2013 were used to obtain the participant's opinions on how to improve the model, content or approach to teaching. The researcher analysed the comments by familiarising herself with the forms and collating the comments together using the different questions as categories. The comments were then interpreted and key themes summarised on the things that went well, and those that could be improved during the training. These findings were shared with the educational team, who used it to revise the training programme accordingly. Revisions were also made based on the reflections of the educational team on their training experience.

Ethics considerations

This study was approved by the Health Research Ethics Committees (HREC) at Stellenbosch University (Reference number: N11/11/321), on 27 February 2012.

3.2.4 RESULTS

Design

The Canadian Task Force on Preventative Health, the Royal Australian College of General Practitioners, the National Health Service in the UK, the Department of Health and Aging in the Australian government and the Kinect consortium, all recommend the use of the 5 A construct in BBCC and promote its integration into primary care.^{3,4,7,8} The 5 A construct consists of five steps: ask, advise, assess, assist and arrange. It provides PCPs with a broad framework for BBCC, which is simple to understand, applicable to different settings, and can be used by PCPs from different disciplines and levels of expertise.

Motivational interviewing (MI) is a flexible, evidence based, clinical skill that can be used when talking to patients about how and why they might change their behaviour.^{13,23} MI provides an alternative approach to the usual more authoritarian approaches and outperforms traditional advice giving in 80% of studies.²² PCPs, who have only a small amount of time with patients, can expect a 10-15% improvement in patients changing their risky lifestyle behaviours after counselling based on motivational interviewing.²³ At the core of MI lies the guiding style which promotes collaboration, empathy, evocation, respect for choice and control, and a clear focus.

A guiding style communicates an approach of “I can help you solve this for yourself” as opposed to “This is what you must do”. To accomplish this, PCPs need to be able to switch from their traditional role as directive, expert advice givers, to guides that can skilfully assist the patient to make difficult decisions about change.

Training practitioners to be competent in MI is not easy, and in our context unlikely to be achievable with the majority of PCP's in a short training course.^{19,24} The decision was taken therefore to rather focus on the characteristics of a guiding style derived from MI and the essential underlying communication skills.^{19,22,25} The recommended approaches to completing each of the steps in the 5 A model were re-written to adopt this guiding style. The title of the second step, which was “advise” in the original model, was changed to “alert” as unsolicited advice giving is seen as incongruent with a guiding style. The concept of alerting someone to a potential risk and evoking their response was, however, seen as more congruent with a guiding style.

The underlying spirit of the guiding style was based on three elements, which were collaboration vs. confrontation between the provider and the patient, evoking or drawing out the patient's ideas about change rather than imposing ideas, and emphasizing the patient's autonomy vs. being authoritative.^{13,14,22} Core key communication skills that support the guiding style were defined as

asking open ended questions, reflective listening, affirmations and summaries (OARS).¹³ Reflective listening and summarisation are perhaps the most crucial skills, which demonstrate empathy and encourage the patients to elaborate, whilst the use of open ended questions invites patients to consider how and why they might change. Offering affirmations helps the patient to recognise their own strengths.

Therefore, in our model of BBCC the key principles of a guiding style were integrated into each step, of the 5 As structure as shown in Table 3.1. This approach to BBCC was supported by a local quasi-experimental study that demonstrated its effectiveness in helping pregnant women reduce or stop tobacco smoking, when delivered by nurse midwives and lay counsellors.²⁰

Table 3.1: Model of brief behaviour change counselling

Step in the 5 As	Tasks in a guiding style
Ask	Ask about and document behavioural risks: <ul style="list-style-type: none"> • Identify risk behaviour and document in record. • Ask the patient what he/she already knows about the risks associated with the behaviour or would like to know. Respectfully affirm what he/she knows. • Request permission to provide further information.
Alert	Provide relevant information in a neutral manner: <ul style="list-style-type: none"> • Before giving information, emphasise that your role is to assist the patient in making informed choices, not to compel them to a particular course of action. Offer information on the health risks or benefits of change in a neutral way. • Provide information using the “E-P-E” method which is to elicit what the patient already knows and wants to know, provide relevant information, and elicit the patients understanding of this. • If there is already a health problem related to the risk behaviour, clearly link the two.
Assess	Assess readiness to change: <ul style="list-style-type: none"> • Ask the patient how they feel about the information provided and the possibility of making a change at this time. • Assess how important change is for the patient and how confident he/she feels about change. Recognise and respond to “change talk”, which are statements by the patient revealing a desire, ability, reason, need or commitment to change • Offer support and assistance, but respect the patient’s decision.
Assist	If response is “Not ready to change”: <ul style="list-style-type: none"> • Ask about and acknowledge patient’s concerns with empathy. Avoiding any

	<p>arguments.</p> <ul style="list-style-type: none"> • Offer help if he/she comes to a decision to change in the future. • Request permission to give patient materials (if available), which could assist in them making a decision in the future. • If response is “Yes, am ready to change” then provide practical assistance to change such as: • Positively reinforce any intentions to change which the patient expressed, no matter how small they may be. <p>Express confidence in their capacity to achieve their health goal.</p> <ul style="list-style-type: none"> • Offer materials which teach behavioural change strategies and skills and express confidence that they will help. • Prompt the patient to anticipate problems and barriers and to consider how to overcome these. • Prompt patient to seek social support in their social environment. • Prescribe medication, if appropriate.
Arrange	<p>Arrange for follow up and/or referral:</p> <ul style="list-style-type: none"> • Document decisions made and materials given in the clinic record, add a reminder to discuss progress during the next visit and schedule follow up contact. • Reiterate your and clinic staff’s commitment to provide further information and support during behavioural change process. • Refer patient to other health care providers for more intensive counselling if possible or to community based resources.

Based on this conceptual model, the results of the situational analysis and learning outcomes identified from the literature, as well as the educational team’s own expertise in MI, the following learning outcomes were developed. At the end of the training programme participants should be able to:

1. Use a guiding style of counselling
2. Practice reflective listening
3. Recognise, elicit, and respond to change talk
4. Exchange information
5. Assess readiness to change
6. Use the 5 A steps (Ask, Alert, Assess, Assist, Arrange)
7. Counsel patients regarding the four key risk factors

Development

A key principle of this stage was to develop an educational process that itself resonated with the guiding style. In essence we recognised that we were asking PCPs to change their own behaviour in terms of how they counselled other people about behaviour change. Therefore the principles being recommended for BBCC should also be embodied in the course itself in terms of its structure and process.

These principles needed to not only be embodied in the structure and process of the course, but also modelled by the trainers themselves. In other words, the trainer's style of training needed to be congruent with the style of counselling being taught.²⁶

The MI training content was developed according to the eight stages for becoming competent in the clinical use of MI described by Miller and Moyers.¹³ These stages are:

1. Becoming familiar with the spirit of MI
2. Acquiring basic MI skills to become proficient in the ability to use open- ended questions, provide affirmations, apply reflections and provide summaries when necessary.
3. Recognise and reinforce change talk
4. Elicit and strengthen change talk
5. Rolling with resistance to avoid confrontations and argumentation
6. Developing a plan, by asking "what next?"
7. Helping the patient to commit to the change plan
8. Ability to switch between MI and other intervention styles

Behaviourist learning theory is particularly useful when a change in behaviour is the desired outcome of a training intervention.²⁷ This approach recognizes three key areas; namely, that the desired behaviour is the clear focus of the learning, that participants can practice the behaviour in a controlled and safe environment and that the training reinforces the behaviour by providing feedback on performance. Typically, the teacher demonstrates the specific behaviours, whilst participants observe, and then they practice and receive feedback on their own performance under controlled circumstances.²⁷

The training was designed to give participants time to create a safe, supportive and reflective group environment.²⁶ Group discussions provide an essential component of training, and to ensure participation from every participant, group size should be limited to 20 or less. For this training programme, a ratio of one trainer to twelve students was thought to be possible, but ideally one trainer to eight participants was seen as the ideal.

Traditional didactic teaching methods were not considered effective in changing behaviour.²⁶ Although the training included some brief sharing of theory using didactic methods these were combined with other approaches such as the jig-saw method in which members of a small group collectively master a piece of the whole theory and then share this piece with others in a new small group that includes peer-experts in all the other pieces. After information was given in a didactic manner the participants were also encouraged to reflect as a group or individually and consider their response to the theory or ideas presented.²⁶ The programme included information on the specific risk factors, as this improves participant content knowledge, and confidence in delivering effective interventions.^{26,28}

Based on best evidence from the literature review, the following principles were used in the development of the training course: ^{26,28,29}

- Provide evidence of the current deficiencies in counselling, the reasons for them, and the consequences for patients and doctors.
- Offer an evidence base for the skills needed to overcome these deficiencies
- Demonstrate the skills to be learnt
- Provide the opportunity to practice these skills
- Give constructive feedback on performance

Based on the time that could reasonably be made available for the training within the selected curricula for nurses and doctors, the training was designed as an eight hour workshop, with four two-hour sessions. The final training programme that was developed is summarised in Table 3.2.

Table 3.2: Summary of the training programme

Session	Time (minutes)	Purpose of session	Activities for session
1.1	15	Introductions and overview of programme and learning outcomes	Introduce the training programme in terms of the people involved, the intended learning outcomes and the process to be followed
1.2	30	Understand participant's own prior experience of the challenges and successes of BBCC	Invite students to reflect in pairs and then share with the whole group on their prior experience with BBCC. This step was thought to be important in terms of building rapport between the trainers and participants, understanding the participant's context, allowing them to express their ambivalence and

			frustrations and have these recognised, and helping to focus attention on behaviour change counselling.
1.3	45	Evidence for BBCC	Provide evidence of the current deficiencies in counselling, the reasons for them, the consequences for patients and health care providers. Provide evidence for the model of BBCC and its effectiveness. Allow time for discussion / questions.
1.4	30	Understand the guiding style	Identify the key characteristics of the guiding style by contrasting two DVD clips of BBCC – the one in a directing style and the other in a guiding style. Ask students to identify the key characteristics of each style, record and compare on newsprint.
2.1	40	Reflective listening	Talk: Give a brief overview of the theory of reflective listening Modelling: Demonstrate using DVD Practice: Using small group interactive exercises
2.2	40	Recognise, elicit and respond to change talk	Talk: Brief overview of theory from motivational interviewing Practical: Trainers reads out a list of statements and students drum on tables if they recognise change talk
2.3	40	Introduction to the 5 As	Talk: Overview of the 5 A steps, the purpose of each step and communication skills involved Allow time for discussion / questions
3.1	80	Applying the 5 As to each risk factor	Form 4 groups <ul style="list-style-type: none"> Each group looks at the training manual (5 A steps and patient

			<p>education material) for one behavioural risk factor</p> <ul style="list-style-type: none"> • Form 4 new groups with one person from each of the previous groups • Each person teaches the others about their risk factor • Elicit feedback / discussion in whole group
3.2	40	Exchanging information	<p>Talk: Brief overview of theory from motivational interviewing</p> <p>Modelling: Demonstrate elicit-provide-elicite with DVD</p> <p>Practice: Small group interactive exercises</p>
4.1	30	Assess readiness to change	<p>Talk: Brief overview of theory from motivational interviewing and application to the assess stage.</p> <p>Modelling: Demonstrate in role play or DVD</p> <p>Practice: Small group interactive exercises</p>
4.2	60	Practice integrated BBCC	<p>Groups of 4</p> <ul style="list-style-type: none"> • Allocate one different risk factor per person • Each person thinks of a patient to role play • Role play BBCC • Observe, give feedback and discuss • Facilitator to rotate to each group
4.3	25	Planning integration into real world	<p>Interview each other in pairs</p> <ul style="list-style-type: none"> • Assess how ready your partner is to implement BBCC • Assist the person appropriately to plan change • Each person briefly gives

			feedback on their way forward to whole group <ul style="list-style-type: none"> • Discuss ways of ongoing learning with group
4.4	5	Closure and evaluation of workshop	Complete end of workshop with feedback form

A checklist of all the educational resources required was developed. This included the power point slides needed for the talks, the DVD material, the instructions for the small group exercises, the course manual with information on risk factors, and the equipment needed. From this list the team decided which resources could be accessed from already available materials, and which resources needed to be developed.

The international Motivational Interviewing Network of Trainers (MINT) operates a website with extensive information about the clinical method, and training of MI.³⁰ This website has a manual containing a menu of exercises that MINT trainers use for various skills training. Practical exercises were chosen from the MINT manual, adapted for our setting, and used as practical exercises after a skill had been modelled.³⁰

A training manual that summarised the model of BBCC and the underlying evidence as well as applying the model practically to each risk factor was printed for each participant. In addition each participant received patient educational material on each risk factor that was designed to dovetail with the approach to BBCC. All of these printed materials can be accessed via the web at www.ichange4health.co.za.

Both the researcher and Dr Murphy were trained internationally as MI trainers during the development of the course, and became members of MINT.³⁰ This experience was useful to improve their embodiment of the guiding style in the teaching approach, to update the practical exercises, and incorporate the latest theory of MI.¹³

Implementation

Twelve family medicine registrars, two general practitioners in private practice, and four family physicians were trained. Twenty three nurses on the 1 year Diploma course (Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care) at the University of Stellenbosch were trained.

Evaluation

Overall feedback on the conceptual model and content was positive. Doctors reported that the 5 As framework was a useful structure, and that the patient information materials could help them save time during counselling. Nurses felt that reflective listening skills could help them feel less

frustrated when counselling patients, as they conceptualized their potential roles as an expert guides, rather than expert advice givers. Nurses found the course materials useful, not only as a source of information on NCDs, but also as resource when arranging for referral. Whilst participants found the interactive sessions (role playing, group discussions and practical exercises) to be valuable in practicing new skills, they also identified the need for clearer instructions from trainers before exercises. Participants valued feedback from trainers during practical sessions, as they felt this improved their confidence in trying out new skills.

The training programme was adapted by the team using the participant's feedback, as well as their individual experiences during training. The team realised that ideally two trainers were needed during clinical skills training sessions, to ensure individual feedback from a trainer. The need to encourage and strengthen the value of peer reviews was identified, and therefore trainers purposefully selected group members, to combine stronger and weaker members. To improve individual participation and save time, trainers provided clearer instructions before practical exercises.

3.2.5 DISCUSSION

This study has led to the design, development and implementation of a training programme for BBCC aimed at primary care providers in the South African context. The training programme incorporated best practice from both international and local studies and was tailored to the needs of local PCP's and their context. To our knowledge, this training programme is the first attempt at developing and implementing best practice BBCC training in our context, targeting a variety of PCP's, and addressing all four NCD risk factors.

The adaptation of the 5 A approach with a guiding style derived from motivational interviewing was an innovation in the African context and there are only a few other published examples internationally.^{4,25,31,32} Although approaches to training elsewhere include combinations of e-learning, with face-to-face training as well as ongoing support and feedback, they all aim to teach the underlying spirit of the guiding style of MI.^{25,26,28,31,32} Training as part of continuing professional development through GP networks showed incomplete uptake, which could imply the need to integrate BBCC training into undergraduate and postgraduate programmes.²⁵ One training programme which measured patient level outcomes was found ineffective, and interestingly did not train clinicians in listening skills, but focused more on the value of the guiding style, rather than achieving clinical competence.³²

Training interventions for BBCC are not always clearly described, and the terminology used is inconsistent.³³ In an attempt to address this a review of BBCC and training resulted in a best practice checklist for training programmes.^{26,28} In line with the checklist our programme includes clear information about the evidence base and theoretical underpinning of the model, tools for assessing readiness to change, reflective listening skills, provides tailored made information for

patients, and topic specific training, whilst focussing on the development of essential communication skills, by providing time for demonstrations, practice of skills and feedback. Our programme, however, does not include training on tailoring information specifically for different patient groups such as the young, those with cultural differences, or minority ethnic groups.

The best practice checklist suggests that the individual context of participants, the trainer's attributes as well as the process of delivery influence effectiveness. In our programme the participants were from a variety of linguistic, cultural, and professional contexts. In order to improve the trainer's understanding of their context, the programme always started with a session to elicit participant's prior experience, attitudes and expectations. Our trainers had completed training both in MI and in how to train MI which enabled them to embody and evoke the guiding style during the training. We believe that trainers should have this level of proficiency, which may limit the immediate scaling up of training. If trainers with less proficiency are used then this may reduce the effectiveness of the training. In terms of the process of delivery, the workshop style used is supported by the checklist.²⁸ However, ongoing support and feedback was not provided. Booster sessions to provide feedback and continuous support is regarded as important to maintain and develop skills over time.^{28,34} On-line support and feedback with the use of formative assessment of audiotapes is currently being developed to supplement this course.

The WIDER recommendations were developed to improve reporting of behaviour change interventions in clinical trials.³⁵ This article is consistent with the WIDER recommendations in giving a detailed description of the intervention, which includes the characteristics of the trainers, the recipients, the setting, the mode of delivery, the intensity and duration of delivery, and a detailed description of the content. Likewise the findings have described how the intervention was designed and developed, the techniques used to elicit change and the underlying conceptual model. A detailed manual has also been made available as a supplementary file. As this is not yet being assessed as part of a clinical trial the characteristics of a control group are not relevant here and the fidelity of the trainers to the design was not formally assessed.

A possible limitation of the ADDIE process is that there was less engagement with nurses, compared to doctors, in the design and development stages. For example the design was presented mainly to expert doctors in primary care, and the educational team consisted of two family physicians and a social scientist. Nevertheless we did consult extensively with nurses during the situational analysis. During the implementation phase, the training was offered as an optional extra to nurses on the diploma programme as the time required was too much for the formal curriculum, and this could have selected a more motivated group. The majority of doctors were registrars in family medicine and their motivation and experience could also be different from other primary care doctors working in the public and private sector.

The educational team involved in the ADDIE process were predisposed to consider the 5 As and MI as appropriate approaches to BBCC. BM had been teaching MI for several years and had

previously conducted research on adaptations of MI. KM had conducted a quasi-experimental study on the 5As and a guiding style in the context of smoking cessation in pregnant women. It is possible that a different approach might have been constructed if the team had no or different prior experience. Nevertheless the team were guided by the situational analysis (Article 1) and the literature review (Chapter 2) by the principal researcher (who had no prior commitment to a particular approach) in their starting point. The team was therefore open to consider alternative models of BBCC if these were suggested by the literature review as better options in our context.

The study was conducted in the Western Cape, where the health system and human resources for health are generally better developed than elsewhere in the country. Additional contextual challenges might have been encountered if the programme had been developed in another province.

Evaluating the effect of training is good practice, and future research is focussing on evaluating the effectiveness of this training programme. The results of this evaluation will be published elsewhere. Evaluation should make it possible to determine the impact on clinical practice amongst the target groups, measure the degree to which the learning outcomes were met, and might also indicate which PCPs are best to train.^{9,10,28} Exploring the application of this programme to other PCPs, such as community health workers and lay counsellors, is also recommended for future research. Ultimately evaluation should measure the effect on patient behaviour and risk factors.

Although the training programme has not yet been fully evaluated the need for it in our context has been immediately recognised and embraced. The Chronic Diseases Initiative for Africa, through a programme entitled *ichange4health*, helped to further develop the materials and train trainers from Departments of Family Medicine and Primary Care throughout South Africa. These trainers are now training medical students, general practitioners and other family physicians in their respective areas. A strength of this training intervention is its feasibility to train primary care providers to train others in BBCC, and future research could evaluate the effectiveness of training the trainers. The authors have also presented the training programme in other countries such as Botswana and Namibia.

3.2.6 CONCLUSION

This study designed a new approach to BBCC, which was based on a conceptual model that combined the 5 As (ask, alert, assess, assist and arrange) with a guiding style derived from motivational interviewing. The study then developed an 8-hour training programme that combined theory, modelling and simulated practice with feedback, delivered also in a guiding style, for either clinical nurse practitioners or primary care doctors in South Africa. The programme was implemented and revised based on initial feedback. The programme has already been widely adopted, but also requires further evaluation in our context.

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3.2.8 COMPETING INTERESTS

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

3.2.9 AUTHOR CONTRIBUTIONS

All three authors were involved in the design and development stages, as well as the implementation of the pilot training. The rest of the training sessions, and evaluation of feedback, was mostly done by ZM. All the authors contributed to the article, and approved the final manuscript.

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3.3 Article 3:

Evaluation of a training programme for primary care providers to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa

This article has been accepted by the Patient Education and Counselling Journal for publication, August 2015

3.3.1 INTRODUCTION

Non-communicable diseases (NCDs) are the leading cause of mortality globally, contributing to 60% of all deaths, with nearly 80% occurring in the developing world.¹ Between 1990 and 2013, the numbers of deaths from NCDs and injuries steadily increased, while deaths from communicable, maternal, neonatal, and nutritional causes decreased.¹ Formerly thought of as diseases of affluence, it is expected that the largest increase in NCD deaths will occur in low and middle income African countries, where they will contribute to 70% of deaths by 2020, and be the most common cause of death by 2030.² South Africa is faced with a transition in the burden of disease as the dominance of chronic infectious diseases, such as HIV/AIDS and tuberculosis, is rivalled by the growing prevalence of NCDs, such as hypertension and type 2 diabetes.^{3,4} The scaling up of the HIV treatment programme has also resulted in longer life expectancy, which increases the number of people at risk of developing NCDs. This has led to an increased prevalence of NCDs in all communities, disproportionately affecting poor people living in urban settings, and placing an increasing demand on chronic care delivery.⁵ The risk factors associated with NCDs have been clearly identified and confirmed locally.^{6,7} Tobacco smoking, excessive alcohol consumption, lack of physical activity and unhealthy diet are the key modifiable factors contributing to morbidity and mortality from NCDs.^{8,9}

Health services in low and middle income countries, such as South Africa, are based on a model of treating acute illness, and are not organised for the prevention and on-going management of NCDs. The need for integrating the care of chronic diseases into primary care, has recently been recognized by the National Department of Health in their strategic plan for NCDs.¹⁰ Ambulatory primary care is dominated by patients presenting with NCDs, and multi morbidity is common.¹¹ Although behavioural interventions that target multiple risk factors have been demonstrated to improve risk factors for diabetes and hypertension they are not given priority in the existing health system.¹² Shifting the focus of primary care systems from an acute to chronic care model is a complex task, and all levels of the system need to work together to successfully implement, support and coordinate chronic care.^{3,13}

The internationally recognised chronic care model acknowledges the need for change, not only at the system level, but also at the level of the consultation.¹⁴ It is recommended that primary care providers shift away from the traditional, directive approach to counselling patients with risky lifestyle behaviours and adopt a more patient-centred style. A directive style assumes that it is the provider's responsibility to convince the patient on what, and how to change.¹² This approach often results in resistance from the patient and frustration from the provider as patients don't change when they expect them to.¹⁵ In current best practice recommendations, however, the patient is regarded as the expert in deciding if and why they should change their lifestyle, and the PCP acts as an expert guide, working collaboratively with the patient to support self-management.¹³

Self-management support involves assisting the patient by guiding them in problem solving, decision-making, resource utilization, forming a patient-health care provider partnership and taking action.¹³ Several approaches can be used to support the patients' self-management¹³ For example, in our local context, a group self-management programme for people with diabetes delivered by health promoters, reported behaviour change and was shown to be cost-effective.^{15,16,17} However, brief behaviour change counselling (BBCC), delivered by PCP's to individual patients, as part of the normal consultation is also an effective way of assisting patients.^{15,18} Individual BBCC should be actively integrated into everyday primary care and, therefore, training is required to enhance practitioners' perceptions of the value of changing their consultation style, their ability to succeed, and to provide them with the necessary skills.^{6,8,19}

South Africa's primary care services are primarily nurse led, and appropriately trained nurses with doctors playing a supportive and reinforcing role, can deliver high quality preventative care.²⁰ Currently the local training of PCPs on BBCC is not designed to achieve competency, and PCPs lack confidence in their ability to perform BBCC.¹⁵ Apart from insufficient training, PCPs are also faced with numerous other barriers, including language barriers, lack of time, poor content knowledge of lifestyle modification, poor continuity of care, and their expectations of patient non-adherence.^{12,15} Redesigning the current training programme was therefore deemed necessary in order to improve BBCC as a component of chronic care.¹⁵

The ADDIE process provided a systematic approach for the Analysis of learning needs, the Design and Development of the training programme, its Implementation and initial Evaluation.²¹ The overall aim was to ensure that PCPs were trained to use a best practice BBCC method for patients with risky lifestyle behaviours that included screening for risky behaviour, providing evidence-based accurate information, assessing readiness to change, and offering effective guidance or referral. A detailed description of the situational analysis, and the development and implementation of the training programme is given elsewhere.^{15,21} This study reports on the initial evaluation of the effectiveness of the training intervention.

There are a number of approaches that can be used to assist patients in changing risky behaviours, such as motivational interviewing, health coaching and the 5 As (Ask, Alert, Assess,

Assist and Arrange). No single approach is superior to the other, in fact they often complement each other and most BBCC training programmes are designed by using a combination of approaches.¹³ Very few of these training programmes assess the effectiveness of the training, by measuring primary care providers performance before and after the training programme.^{22,23,24} A possible reason for this could be that each programme is unique in terms of content, duration, target audience and setting, and therefore no standardised tool to assess the effectiveness of all BBCC programmes currently exists. To our knowledge, this was the first time that a training intervention for BBCC, based on models found to be successful in high-income countries, was developed for our setting, and tested in an African context. The specific objectives of this study were to:

- Evaluate the ability of PCPs to demonstrate BBCC at the end of the training course.
- Evaluate the ability of PCPs to incorporate BBCC into actual clinical practice.

3.3.2 METHODS

Study design

The study was a before-and-after study design with evaluation of BBCC skills at baseline, directly after training and six weeks later when participants had returned to their clinical practice.

Participants consulted a standardised patient who presented with one of the four risky lifestyle behaviours, immediately before, and immediately after the training intervention. Six weeks later, participants were again consulted and recorded by a standardised patient at the clinic where they worked, however the trained participants were blinded as to the identity of the patient within their normal clinical workload.

Study participants and Setting

The study was conducted within the context of the primary care system in the Western Cape, where the majority of patients are seen in the public sector by clinical nurse practitioners in either small clinics or larger health centres. The public sector primary care system is struggling to develop a culture of patient-centeredness and to provide some form of continuity of care. Patients in the public sector are uninsured and come from low educational and socio-economic backgrounds, while patients in the private sector are usually employed and insured, or can afford out-of-pocket payments. In the private sector care is usually provided by a general practitioner.²⁵

Our study participants included primary care doctors and clinical nurse practitioners. The primary care doctors included medical officers working in the public sector, general practitioners working in the private sector, or family physicians. Family physicians have 4-years of postgraduate training, while working as a registrar in the public sector and registered with either Stellenbosch University or the University of Cape Town. The clinical nurse practitioners were receiving training through the

1-year Diploma course (Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care) at Stellenbosch University.

Sample size calculation and sampling strategy

A sample size of 40 individuals was calculated to have 86% power to detect a change of 0.1 on the global rating, assuming a standard deviation of 0.2. A sample size of 20 nurses and 20 doctors was therefore recommended, but to compensate for attrition we aimed to include 25 from each group.

Participants were recruited by advertising it as a short course to family medicine and nurse training programme managers, family physicians, medical officers, family medicine registrars, general practitioners, and nurses on the Diploma course. Participants were excluded from the study if they could not be followed up for the third recording at PHC clinics in the Cape Metropolitan or rural area, after the training, or if they did not consent to participate in the study.

Training Intervention

The training course integrated two behaviour change approaches, the 5 As and a guiding style derived from motivational interviewing (see Table 3.3), which are both well supported in the scientific literature on behaviour change counselling.^{13,19,26,27} The 5 As provided a simple structured approach, incorporating elements of the guiding style into each of the five steps, in order to enhance patient centeredness. In other words a guiding spirit of “allow me to help you sort this out for yourself”. The training was designed as an eight hour workshop, with four two-hour sessions, in order to fit into the time available in the participant’s curricula or clinical practice. Each session was developed using three key principles: to provide evidence of the current deficiencies and the need for a new approach, to model the approach and allow participants to practice new skills.

Table 3.3: Integrated 5 As steps with a guiding style approach

Step	Criteria
Step 1: Did the PCP ask about the risky behaviour?	<ul style="list-style-type: none"> • Asks about risky behaviour • Asks permission to discuss the issue • Asks what the patient already knows, or wants to know
Step 2: Did the PCP alert the patient to the risk?	<ul style="list-style-type: none"> • Provides information in a neutral way • Provides information tailor made to the patients' needs • Elicits the patients understanding of the information provided
Step 3: Did the PCP assess readiness to change?	<ul style="list-style-type: none"> • Assesses importance of change • Assesses the patients confidence to change • Uses scaling questions correctly/appropriately*
Step 4 : Did the PCP a. Provide any practical assistance to help the patient change? b. Ask the patient to think about changing in the future?	<ul style="list-style-type: none"> • Discusses different options available with the patient appropriate to their readiness to change • Respects the patients autonomy in their decision/choice • Provides relevant practical assistance such as educational leaflets/telephone numbers/prescription
Step 5: Did the PCP a. Arrange for follow up? b. Open the door for the patient to come back in the future?	<ul style="list-style-type: none"> • Arranges for follow up appointment • Demonstrates a willingness to offer ongoing support • Explores how to involve the patient's social support system such as friends or family

*

Data collection process

A group of six standardised patients were purposefully selected and recruited from the available pool of actors at the Division of Family Medicine and Primary Care, Stellenbosch University. They

* A question in which the response is chosen from a range of values.

were trained to present one of the four behavioural risk factors in a specific role play. Inclusion criteria stipulated that they had to simulate the usual patient population seen by PCPs and that they had the ability to reliably role play. Each PCP was audio-recorded whilst counselling a different standardised patient, directly before training, directly after the training, and six weeks later in their clinical practice. In their clinical practice the standardised patients inserted themselves into the queue of normal patients waiting to see the practitioner, and were seen as part of the usual clinical workload. The PCPs were therefore blinded as to the identity of the standardised patient in their clinical practice and unaware of the day on which they would attend.

Each recording was evaluated for both guiding style as well as the delivery of the 5 As. For the guiding style we used the Motivational Interviewing Treatment Integrity (MITI 3.1) tool, which is a validated instrument that can be used for evaluating competence in MI.²⁸ It can be used as an assessment of whether a candidate has reached beginning competency or proficiency, but also to evaluate the effects of training and skills development of a practitioner over time. The MITI 3.1 can be effectively used to assess shorter interventions, such as those typically used in BBCC.^{28,29}

To use the MITI 3.1 tool, a coder listens to a recording, and scores the tape in two sections; global scores and behaviour counts. The first section focusses on three global scores for autonomy, evocation and collaboration, which characterises the guiding style. Autonomy measures the extent to which the counsellor supports the patient's choice and sense of control, whilst evocation measures the ability of the counsellor to elicit the patient's own motivation to change. Collaboration measures the extent to which an equal partnership is formed. The final global score is a mean of these three values on a Likert scale from 1 to 5 that aims to capture the coders overall impression of the session. Global scores less than 3 indicated a more directive style, whilst higher scores demonstrated a guiding style. The second section counts the frequency of specific counsellor behaviour in five categories (MI adherent utterances, MI non-adherent utterances, information-giving, questions and reflections). MI adherent statements are consistent with the MI approach, for instance asking permission before giving advice, whilst non MI adherent statements are not, for instance, blaming the patient. Two of these categories include subcategories (closed and open questions, and simple and complex reflections). Open ended questions allow for a range of possible answers, whilst closed questions; require a simple yes or no answer. Reflections involve rephrasing a statement to capture the implicit meaning. A simple reflection adds little meaning to the patient's talk, whilst a complex reflection adds substantial meaning. The behaviour counts are then summarised in four calculated scores (% MI adherent statements, % complex reflections, % open questions and the ratio of reflections to questions). For all scores the MITI includes thresholds that indicate basic competency or full proficiency.³⁰

A few studies have used audio recorded data to evaluate the 5 A's for physical activity and smoking cessation, but to our knowledge no study has evaluated the delivery of the 5 A's adapted

to incorporate elements of the guiding style into each of the steps from audio recordings of counselling for any of the four main NCD risk behaviours.³¹

We developed and used a simple observational tool to assess the delivery of the 5 As for all four risk behaviours. A draft tool was developed by the principal researcher based on the learning outcomes for each step of the 5 As in the training manual. Feedback was then obtained on the content and construct of the tool by the other authors who are experts in behaviour change counselling. The revised tool was then piloted by the researcher and the final anchors were defined for each score (0, 1 or 2) for each of the 5 steps. For each step in the 5 As three integral tasks were identified as per the training manual and participants were scored according to the extent to which they completed all three tasks (Table 3.3)²¹. If they performed none of the integral tasks at the specific step, they scored 0, if they performed one or two tasks they scored 1 and if they managed to perform all three tasks, they scored 2. Tasks could be completed by the practitioner explicitly or by the patient implicitly completing the task. For example the patient might reveal their risky behaviour to the practitioner without being explicitly asked. We also realized that the sequence of the delivery of each of the steps of the 5 As was important, for instance, assisting a patient before assessing readiness to change was scored as inappropriate, by deleting all the awarded points for the inappropriate step.³²

Data analysis

The analysis was performed in Statistica version 12 (Statsoft 2014) with the help of the Centre for Statistical Consultation, Stellenbosch University. Repeated measures analysis of variance (ANOVA) was used to compare data from all three time points (baseline, post training and in clinical practice). For the MITI tool we compared data using the mean total global score and the mean score for each of the five behaviour counts. For the 5 As tool, we compared the mean score for each of the five steps for each recording. The 95% confidence interval was also calculated for each mean. Where statistically significant differences over time occurred a post hoc Bonferroni test was performed to evaluate which comparison was significantly different. The risk of error was set at 5% ($p=0.05$).

Inter-rater reliability was tested for the MITI 3.1 tool by randomly selecting a sample of 18% or 22 recordings across all time points and comparing the scores obtained by the researcher with an international independent rater who was an expert in using MITI 3.1. Analysis calculated the Spearman correlation for the scoring between the two raters. Intra-rater reliability was addressed by the researcher coding each tape twice on different days without reference to the previous coding and then comparing the scores obtained. This was done to increase the reliability of the coding, but no formal correlation analysis was performed as with inter-rater reliability.

Ethical considerations

Ethical approval was obtained from Stellenbosch University, Health Research Ethics Committee (N11/11/321) on 27 February 2012, as well as permission from the Department of Health, in the Western Cape (RP 029/2013) Participants were informed and consented before the first recording that took place on the morning of the 8 hour training. Participants were informed about their responsibilities in the study including the third recording of BBCC in their clinical practice by a simulated patient. A copy of the informed consent form for participants is included in addendum 2: "Participant informed consent form".

3.3.3 RESULTS

A total sample of 123 recordings was collected from 41 participants. During 2012-2013 three groups of nurses and three groups of primary care doctors completed the training programme which was run at Stellenbosch University. Twenty three nurses on the 1 year Diploma course at Stellenbosch University, 12 family medicine registrars during their second year of training at the Universities of Stellenbosch or Cape Town, two general practitioners in private practice in Cape Town, and four family physicians working in the rural areas of the Western Cape were trained. Overall 82% were females and 55% of the participant's spoke Afrikaans[†] as their first language, 37% English and 8% Xhosa[‡]

Table 3.4 presents the results on the extent to which participants adopted the guiding style. The most important comparison is from baseline to clinical practice (recording 1 vs. 3), because this shows what participants retained over time in every day clinical practice. The global score and behaviour counts all showed a statistical significant improvement from baseline to both post training and clinical practice. Although none of the participants met the thresholds for beginning competency in the use of motivational interviewing, the mean score after training almost reached this threshold and subsequently decreased over time. The decrease in proficiency from the end of training to clinical practice was statistically significant for the global score and adherence to MI. It should be remembered however that the training programme was not intended to teach competency in MI but to develop the guiding style and the improvement in global score and adherence to MI principles would suggest that this was achieved. We showed good inter-rater reliability for the global score (spearman=0.61), MI adherence (spearman=0.74) and reflections to questions ratio (spearman=0.64), but poor reliability for %complex reflections (spearman=0.29),

[†] Afrikaans is prevalent throughout much of South Africa, with about 7 million native speakers, or 13.5% of the population, it is the third-most-spoken language in the country. . The language arose in the 17th century through a process of integration and intermixing of various dialects

[‡] Xhosa is spoken by approximately 7.6 million people, or about 18% of the South African population, and it is the second-most-common home language in South Africa as a whole.

and %open questions (spearman=0.2). The results for %complex reflections and %open questions are therefore not presented. The areas which were of more importance to measure in terms of demonstrating a guiding style, however, showed good inter-rater reliability.²⁸

Table 3.4: Evaluation of the guiding style at baseline, post-training, and in clinical practice

MITI criteria	Baseline (1) Mean (95%CI) N=41	Post-training (2) Mean (95%CI) N =41	Clinical practice (3) Mean (95%CI) N=41	p- value (1-3)	p- value (1-2)	p- value (2-3)
Global score (1-5)	2.3 (2.0-2.6)	3.4 (3.1-3.7)	3.0 (2.7-3.3)	<0.001	<0.001	0.01
Motivational Interviewing Adherence (%)	41.3 (32-50)	88.7 (79.3-98.0)	66.7 (57.3-76.0)	<0.001	<0.001	<0.001
Reflections/ Questions (Ratio)	0.2 (0.1-0.3)	0.35 (0.2-0.4)	0.3 (0.2-0.4)	0.03	0.03	0.99

Table 3.5 demonstrates that for the group as a whole, each of the steps in the 5 As protocol improved significantly from baseline to both post-training and clinical practice. All of the steps were recognisable, even at baseline, but there was a statistically significant improvement of performance for each step over time. Since the training and observation tool were designed to incorporate the guiding style into each of the steps, this also suggests that they moved towards a guiding style as a result of the training in addition to completing each step. Arranging for follow up (step 5) was the step performed the most frequently throughout, while assessing a patient's readiness to change (step 3) was lowest at baseline (mean=0.97) and was the only step to also decrease significantly from post-training to clinical practice ($p=0.04$).

Table 3.5: Performance of the 5 A s steps

5 A Steps	Baseline (1) Mean (95%CI) N=41	Post-training (2) Mean (95%CI) N=41	Clinical practice (3) Mean (95%CI) N=41	P value (1-2)	P value (1-3)	P value (2-3)
Step 1 (0-2)	1.39 (1.24-1.53)	1.9 (1.75-2.04)	1.73 (1.58-1.87)	<0.001	<0.001	0.09
Step 2 (0-2)	1.02 (0.74-1.3)	1.78 (1.49-2.06)	1.63 (1.35-1.91)	<0.001	<0.001	0.23
Step 3 (0-2)	0.97 (0.79-1.15)	1.8 (1.62-1.98)	1.56 (1.38-1.73)	<0.001	<0.001	0.04
Step 4 (0-2)	1.26 (1.12-1.4)	1.92 (1.78-2.06)	1.75 (1.61-1.89)	<0.001	<0.001	0.08
Step 5 (0-2)	1.41(1.23-1.59)	1.95 (1.76-2.13)	1.87 (1.69-2.06)	<0.001	<0.001	0.49

For each of the steps there was no statistical difference between the performance of the doctors vs. the nurses, except for the assessment of readiness to change in which the overall mean value for nurses was significantly lower than the doctors (nurses 1.26 (95%CI:1.12-1.39), doctors 1.68 (95%CI:1.53-1.83), $p<0.001$).

3.3.4 DISCUSSION

This was the first study to our knowledge that has evaluated the delivery of a BBCC training programme using the 5 As model adapted to encourage PCPs to use a guiding style in each step when counselling patients on any of the four main NCD risk behaviours. Importantly this was also the first evaluation of such a training intervention using the 5 As in an African context. The study results suggest that training clinical nurse practitioners and primary care doctors in BBCC is effective in the short term and can result in significant adoption of the 5 As used with a guiding style. This study echoes international findings that have demonstrated that PCPs can be effective in providing BBCC.²⁰

BBCC has been demonstrated to improve the frequency of preventive care and support for behaviour change, however its impact on health outcomes remains uncertain. This study did not measure the clinical outcomes for patients, and there are not many published studies that have measured patient level outcomes.^{20,33} However the little evidence that does exist suggests that behaviour change counselling in a guiding style has a 10-15% increased chance of success in changing a wide range of behaviours.³⁴ On this basis we can speculate that the statistically

significant improvement of PCPs, from a directing to a guiding style, could be clinically meaningful, despite the fact that our participants did not reach MI proficiency.

Our findings were similar to a local study of health promoters, who provided group BBCC to diabetic patients, in that counsellor's ability to guide improved significantly, without achieving MI proficiency. Yet in this study, the health promoters were still shown to have a clinically significant effect on reducing blood pressure.³⁵ This intervention was also found to be cost-effective.¹⁷

Another local study that evaluated the combination of the 5 As and a guiding style delivered by midwives and lay counsellors also demonstrated a clinically significant effect on smoking cessation, although the training was not evaluated and the fidelity of the counsellors to the method in clinical practice was not as rigorously assessed.³⁶

Evaluation of the 5 As has shown that full implementation of the 5 A steps in the correct sequence shows better outcomes than partial or inconsistent use.³⁷ For example it is important to assess the patient's readiness to change, because it is a key step in deciding on appropriate assistance and follow up. Our finding that Step 3 "Assessing readiness to change" was the least well implemented task in clinical practice has also been reported in other studies. These studies also reported on PCP's difficulty with assessing readiness to change in the clinical setting.^{31,32,38} This suggests that clinician training should particularly focus on PCPs ability to assess readiness to change.³¹

Training PCP's to deliver BBCC and evaluating the effectiveness of training interventions are recommended as important components of best practice BBCC training programmes.^{18,24,38}

However a recent systematic review of 10 MI training studies for general practitioners to deliver lifestyle advice in primary care, showed that there is limited assessment of skills competence, and just two studies considered patient level outcomes.³³ A strength of this study, therefore, is that it measured the skilfulness of PCPs over time, in terms of competence for both their MI skills, as well as their performance of the 5 A steps, although their performance in clinical practice was not measured beyond six weeks.

Although the MITI can be used for evaluating MI adherence in shorter recordings, it is primarily intended for use in a randomly selected 20 minute segment of a longer recording of a MI therapy session.²⁸ A possible limitation of using the MITI was that the reliability of the coding may decrease when short segments of less than 20 minutes are used, as in this study. A third of the recordings were in Afrikaans, which could also be a possible explanation for the lack of correlation in some behaviour counts. The researcher was a first language Afrikaans speaker, whilst the international coder was a first language English speaker, who spoke Afrikaans as a second language. It should also be noted that the researcher, who was trained as a coder by RM and is a member of MINT, coded all the recordings and therefore changes in score over time would reflect a consistent approach to coding. The coder was also blinded as to which time period the recording came from.

The tool to measure the quality of the delivery of the 5 As was an innovation that all the researchers contributed to designing. The design and development of the tool focused on content and construct validity and resulted in an easy to use tool that was congruent with the model of BBCC and the training programme. However, there was no formal testing of its reliability, which may be a useful focus of a future study.

Every attempt was made to ensure that the standardised patient remained unannounced to the PCP at the 6-week follow up. Providers were not told on which specific day the standardised patients would attend and would not have previously seen the actor. Actors were also chosen to blend in with the demographics of the patient population. While it is possible that some PCPs might have identified the standardised patient from the general timing of the visit, focus of the consultation or other inconsistencies in the performance, we do not believe this would generally have been the case.

3.3.5 CONCLUSION

This study demonstrated that an evidence based 8-hour training programme in BBCC can lead to significant change in the approach to counselling in both clinical nurse practitioners and primary care doctors in the South African context. Significant uptake of the counselling skills was seen immediately after training and 6-weeks later in clinical practice. Practitioners significantly improved in their ability to utilise the 5 A steps and to adopt a guiding style. The training programme **could** be integrated into the training of primary care doctors and clinical nurse practitioners.

3.3.6 PRACTICE IMPLICATIONS

The need to incorporate BBCC training into the undergraduate and postgraduate curricula for primary care doctors, has been recognized internationally and locally.^{15,27,39,40} The ichange4health programme has helped to further develop the materials and train trainers from Departments of Family Medicine and Primary Care throughout South Africa.²⁷ These trainers are now training medical students, general practitioners and other family physicians in their respective areas. Incorporating it into the curricula of clinical nurse practitioners should therefore be prioritized, as they form the cornerstone of primary care. Training programmes should particularly focus on assessing readiness to change as this is the step most likely to be forgotten or avoided during clinical practice.

Future research needs to explore whether the shift in counselling style is sufficient to improve clinical outcomes for all four risk factors. Research should also evaluate ways of reinforcing the training during clinical practice and evaluating to what extent the new skills are maintained over time. Although this study found little difference between doctors and nurses, future research may want to explore differences in baseline skills, responses to training and retention of skills between nurses and doctors.

3.3.7 AUTHOR'S CONTRIBUTIONS

All three authors were involved in the conception, design, development and implementation stages. Data collection was mostly done by ZM, whilst all three authors contributed in the analysis and interpretation of data, as well as drafting and revising of the article, and approved the final manuscript.

3.3.8 ACKNOWLEDGEMENTS

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3.3.9 CONFLICT OF INTEREST

No conflict of interest

3.3.10 REFERENCES

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3.4 Article 4:

Qualitative evaluation of primary care providers experiences of a training programme to offer brief behaviour change counselling on risk factors for non-communicable diseases in South Africa.

This article has been accepted by the BMC Family Medicine journal for publication, in August 2015.

3.4.1 BACKGROUND

Non communicable diseases (NCDs) are the leading cause of death globally and are projected to increase by 15% between 2010 and 2020.¹ This increase is attributable to the increasing numbers of children and adults exposed to the risk factors of obesity, hypertension, diabetes and tobacco addiction that contribute to NCD's as well as to the aging of populations. The main behavioural risks underlying these risk factors are an unhealthy diet, physical inactivity, harmful alcohol intake and tobacco smoking.

In low and middle income countries (LMIC) NCD's disproportionately affect younger adults, there are fewer resources to tackle the problem and services are often poorly prepared for chronic care.² In South Africa, NCD's are not only a burden on the health care system, but are also putting increasing demands on patients, families and society. Patients and families must cope with the consequences of ill health and sometimes disabling complications, while the impact on working age adults and productivity makes this a developmental issue for government. There is also an emerging interaction between infectious and non-infectious chronic diseases. For example, inflammatory cardiac conditions are more common in HIV positive individuals and some side effects of anti-retroviral medication predispose patients to cardiovascular disease. The need for an integrated approach to chronic disease management based on universal principles is clear.²

The National Department of Health (NDOH) has listed the control of NCDs as a key priority in their Strategic Plan.³ Primary care providers (PCPs) are well positioned to address the challenges of both prevention and management of NCDs.⁴ Preventing the common modifiable risk factors associated with NCDs is regarded as an important strategy. In line with World Health Organization (WHO) guidelines, brief behaviour change counselling (BBCC) in primary care is recommended for all four risky behaviours.^{4,5,6} BBCC is defined as a short intervention of 3-5 minutes, usually delivered opportunistically as part of the normal consultation, and which ultimately aims to strengthen their beliefs about their own ability to change risky behaviours.⁷ A patient centred

approach is essential in assisting a patient to self-manage their chronic conditions and associated risk factors.^{6,8}

Delivering BBCC in a patient centred way requires a significant change from the current model that is more orientated towards public health goals, vertical disease programmes and acute care. Patient-centred care requires an understanding of the individual's complexity and context, and integration of programmatic and disease orientated guidelines with the patient's unique situation and goals.⁹ Care for chronic conditions is inherently different from care for acute conditions, as it requires a greater level of organisation that must be sustained over a patient's lifetime, and higher levels of co-ordination between different health workers who may be involved.⁴

Local research has shown that PCPs are sceptical about their ability to help patients change behaviour, partly because current training programmes in the Western Cape are not designed to build such capacity. Apart from inadequate training in counselling skills, they also report numerous other barriers such as language, lack of time, poor knowledge of lifestyle modification and poor continuity of care.^{10,11}

This article reports on a study, which formed part of a larger research project that developed, implemented and evaluated a training intervention for PCPs on BBCC, and assessed providers' competency in delivering a brief counselling intervention. The evidence-based 8-hour programme was designed to train participants in the 5 A's best practice clinical guideline for BBCC [ask, alert, assess, assist, arrange].¹² Although the 5 As provide a straightforward and easily remembered step-wise structure, the original guidelines do not emphasise the importance of a patient centred approach. In this study the 5 As were combined with the guiding principles of motivational interviewing (MI), which is a more flexible approach that is well suited to support self-management and evoke behaviour change.^{6,8} MI works by enhancing the patient's own motivation to change and resolving their ambivalence.

MI has wide applicability in behaviour change conversations within health care settings, and is fundamentally different from the traditional directive and confrontational approaches used in everyday clinical practice. Traditionally, PCPs embody the role of the expert advice giver, and try to convince the patient why, what and how they should change. In MI the argument for change is evoked from the patient, expertly guided by the PCP, through a shared decision making process. The patient is recognised as the expert in their own life and the PCP values and respects their autonomy about how, when and what needs to change. The patient plays an active role, whilst the PCP provides structured direction, expert information and negotiates change sensitively, as an expert guide.⁶

The results of the larger study suggested that training clinical nurse practitioners and primary care doctors in BBCC, in the South African context, was effective in the short term, and could result in significant adoption of the 5 As and a guiding style.¹³ These results echoed international findings

that have demonstrated that PCPs can be effective in providing BBCC. However, the local barriers to counselling in clinical practice remain unchanged. This article reports on a qualitative sub-study, which explored whether the training intervention changed participants attitudes and beliefs about BBCC once they had returned to their clinical practice after the training. The specific objectives of this study were therefore to explore:

1. If the training changed PCPs perception of their ability to offer BBCC
2. Whether they believed that the new approach could overcome the barriers to implementation in clinical practice and be sustained
3. The PCP's recommendations on future training and integration of BBCC into curricula and clinical practice.

3.4.2 METHODS

Study design

This was a qualitative study that used two data sources:

- Verbal feedback from participants at the beginning and end of the training course
- Individual in-depth interviews with participants once they had returned to their clinical practice

Setting

- The study was conducted within the context of the primary healthcare system of the Western Cape, where the vast majority of people make use of the public health care services and do not have access to specialised counsellors on lifestyle modification or behaviour change. Multi-morbidity is common and patients presenting with chronic diseases are managed by clinical nurse practitioners in either small clinics or larger health centres, and only referred to a primary care doctor occasionally.¹⁴ Not all of these nurses are trained clinical nurse practitioners, and even clinical nurse practitioners receive only an additional one year of training to cope with the wide range of problems seen in primary care.
- The training was developed as an 8-hour short course that combined theory; modelling and simulated practice with feedback, for both clinical nurse practitioners and primary care doctors in South Africa. The training programme combined the 5 As with a patient centred guiding style derived from motivational interviewing [Table 3.6]. The design, development, implementation and evaluation has been reported elsewhere.^{15,16} A training manual that summarised the model of BBCC and the underlying evidence as well as applying the model practically to each risk factor was distributed to each participant. In addition each participant received patient educational material on each risk factor that was designed to dovetail with the approach to BBCC. All of these printed materials can be accessed via the web at www.ichange4health.co.za.

Table 3.6: Summary of the training programme

Session	Time (minutes)	Purpose of session	Activities for session
1.1	15	Introductions and overview of programme and learning outcomes	Introduce the training programme in terms of the people involved, the intended learning outcomes and the process to be followed
1.2	30	Understand participant's own prior experience of the challenges and successes of BBCC	Invite students to reflect in pairs and then share with the whole group on their prior experience with BBCC. This step was thought to be important in terms of building rapport between the trainers and participants, understanding the participant's context, allowing them to express their ambivalence and frustrations and have these recognised, and helping to focus attention on behaviour change counselling.
1.3	45	Evidence for BBCC	Provide evidence of the current deficiencies in counselling, the reasons for them, the consequences for patients and health care providers. Provide evidence for the model of BBCC and its effectiveness. Allow time for discussion / questions.
1.4	30	Understand the guiding style	Identify the key characteristics of the guiding style by contrasting two DVD clips of BBCC – the one in a directing style and the other in a guiding style. Ask students to identify the key characteristics of each style, record and compare on newsprint.

2.1	40	Reflective listening	Talk: Give a brief overview of the theory of reflective listening Modelling: Demonstrate using DVD Practice: Using small group interactive exercises
2.2	40	Recognise, elicit and respond to change talk	Talk: Brief overview of theory from motivational interviewing Practical: Trainers reads out a list of statements and students drum on tables if they recognise change talk
2.3	40	Introduction to the 5 As	Talk: Overview of the 5 A steps, the purpose of each step and communication skills involved Allow time for discussion / questions
3.1	80	Applying the 5 As to each risk factor	Form 4 groups <ul style="list-style-type: none"> • Each group looks at the training manual (5 A steps and patient education material) for one behavioural risk factor • Form 4 new groups with one person from each of the previous groups • Each person teaches the others about their risk factor • Elicit feedback / discussion in whole group
3.2	40	Exchanging information	Talk: Brief overview of theory from motivational interviewing Modelling: Demonstrate elicit-provide-elicite with DVD Practice: Small group interactive exercises
4.1	30	Assess readiness to change	Talk: Brief overview of theory from motivational interviewing and application to the assess stage. Modelling: Demonstrate in role play or DVD

			Practice: Small group interactive exercises
4.2	60	Practice integrated BBCC	<p>Groups of 4</p> <ul style="list-style-type: none"> • Allocate one different risk factor per person • Each person thinks of a patient to role play • Role play BBCC • Observe, give feedback and discuss • Facilitator to rotate to each group
4.3	25	Planning integration into real world	<p>Interview each other in pairs</p> <ul style="list-style-type: none"> • Assess how ready your partner is to implement BBCC • Assist the person appropriately to plan change • Each person briefly gives feedback on their way forward to whole group • Discuss ways of ongoing learning with group
4.4	5	Closure and evaluation of workshop	Complete end of workshop with feedback form

Study population and selection of participants

Our study population included primary care doctors and clinical nurse practitioners, from both the private and the public sectors. Participants were recruited by advertising the training as a short course offered by Stellenbosch University. During 2012-2013 three groups of nurses and three groups of primary care doctors completed the training programme. Twenty three nurses on the 1-year Diploma course at Stellenbosch University (Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care), twelve family medicine registrars during their second year of training at the Universities of Stellenbosch or Cape Town, two general practitioners in private practice in Cape Town, and four family physicians working in the rural areas of the Western Cape **were trained**. In South Africa, doctors complete a 2-year internship (which includes 3-months of primary care) and 1-year of community service after graduation, and then they are free to enter private general practice, working as a general practitioner, or continue as a medical officer in the public sector with no further training. Since 2007 doctors can train as family physicians through

becoming a registrar in an accredited 4-year postgraduate programme, and be registered as a specialist.

All of the participants were involved in the verbal feedback sessions at the beginning and end of the training. For the individual, face-to-face, in-depth interviews, six doctors and six nurses who had received the training were purposefully selected according to their ability to demonstrate BBCC at the end of training (2 with low scores, 2 with medium scores and 2 with high scores) in order to explore a range of experiences in applying the learning in clinical practice. Participant's scores were obtained from quantitative measurement of their performance in delivering BBCC in audio recordings with standardised patients after training, using the MITI 3.1 tool, and has been reported elsewhere.¹³ Logistical and budgetary limitations determined that these respondents be selected from the group of doctors and nurses, working in the Cape Town Metropole.

Data collection

At the start of the training participants were asked to discuss in pairs their prior difficulties and successes with BBCC. These ideas and experiences were then shared with the group. At the end of the course these ideas were revisited and participants were asked to reflect on them again, in order to explore if there were any changes in their perceptions of BBCC. All these reflections were documented by the researcher in her field notes and on newsprint. All three authors were present for the group discussions during the training.

In depth interviews were conducted 2 weeks after the training at the primary care facilities where interviewees worked in the Cape Metropole. The researcher, who was a qualified family physician and spent many years working in private general practice, performed and audio-taped in-depth interviews in the interviewee's choice of language, either Afrikaans or English. The researcher used an interview guide, and skills such as open ended questions, reflective listening, summarizing, and elaboration to conduct the interviews. The opening question used was "Could you tell me more about your feeling on brief behaviour change counselling before and after the training?" Topics that could then be discussed included their confidence to implement and sustain the new BBCC approach in their clinical practice, the pros and cons of this new approach, and their ideas on training other primary care providers.

Data analysis

The researcher familiarised herself with the data collected during the training, by reading the field notes and newsprint and identifying the key ideas and grouping them into themes. Particular attention was given to how the themes changed from before to after training.

Interviews were transcribed verbatim and the transcripts were checked and corrected prior to analysis using Atlas-ti software [v.6.2.12 2011] and the framework method.¹⁷ The framework approach to content analysis involves the following steps:

- Familiarisation: The researcher listened to the tapes, read the transcripts, and listed recurrent issues or ideas that emerged from the data.
- Construction of thematic framework: The researcher organised these issues and ideas into a framework that was aligned with the objectives of the study. All three authors validated the thematic framework. In Atlas-ti this related to a list of codes organised into families.
- Coding: The researcher applied the thematic framework systematically to all the data by annotating the transcripts with the codes using Atlas-ti.
- Charting: All the data from the specific codes included in a family in Atlas-ti were brought together in one document or chart.
- Mapping and interpretation: The researcher used the charts to interpret the data for themes and look for any associations or relationships between themes. The internal consistency of the interpretation was reviewed by all three authors.

Saturation was reached within the results, and therefore we did not include additional interviews. During the last interviews no new themes emerged, and therefore we did not feel it necessary to perform additional interviews.

Ethical consideration

This study was approved by the Health Research Ethics Committees (HREC) at Stellenbosch University [Reference number: N11/11/321]. The confidentiality and privacy of all interviewees and participants were respected in data analysis and reporting and no names were used.

3.4.3 RESULTS

Results from reflections before and immediately after training

Three training programmes were held for a total of 23 nurses and three training programmes for a total of 18 primary care doctors. Table 3.7 juxtaposes the interpretation of comments from the whole group at the beginning compared to the end of training regarding their approach to delivering BBCC. PCPs appreciated that there could be benefits for themselves and their patients if they shifted their counselling style from that of an authoritarian expert to more of an expert guide. Comments suggested an increase in confidence to provide counselling and the training appeared to enable a transition from a directing practitioner-centred style to a more guiding patient-centred style.

Table 3.7: Interpretation of the themes from the field notes before and after training

Before training	After training
<p><i>More authoritarian</i></p> <p>They reported that patients do not listen to what nurses and doctors, as the experts, tell them to do. They felt that trying to change a patients mind to change a risky behaviour, was a difficult task.</p>	<p><i>More collaborative</i></p> <p>They reported that they needed to listen more to hear what patients had to say, rather than telling them what to do. They reported that they recognised the need to change the way that they look at patients, and that incorporating a patient's circumstances into a conversation about changing behaviour, was an important aspect of counselling.</p>
<p><i>More directing and 'telling' the patient what to do</i></p> <p>They reported that patient's don't understand the importance of changing risky behaviour, and therefore needed to be educated about the importance of change.</p>	<p><i>More eliciting and strengthening the patient's own reasons for change</i></p> <p>They recognised that previously they were trying to change their patients by persuasion and argumentation, rather than simply helping patients to change for themselves according to their own reasons and in their own time.</p>
<p><i>Patients do not have control and choices about their behaviour</i></p> <p>They felt responsible for their patient's unhealthy behaviours, and reported that they found it challenging to counter a patient's beliefs about not changing.</p>	<p><i>Respect patients control and choices</i></p> <p>They reported feeling relieved when they understood why patients often do not change when they expected them to, and that they are not expected to argue about it, or feel frustrated, but rather to respect the patient's choices.</p>

Results from individual interviews after return to clinical practice

Twelve individual interviews were conducted and Table 3.8 provides an overview of the characteristics of these respondents. The type of PCP and their study code (ID) is given after the quotations used below.

Table 3.8: Characteristics of respondents

Study code	Type of primary care provider	Age (years)	Gender	Years since qualifying	First language	Healthcare sector	Competency in BBCC at end of training
1	Nurse	32	Female	9	Afrikaans	Public	Medium
2	Doctor	30	Male	7	Afrikaans	Public	Low
3	Nurse	43	Female	12	Afrikaans	Public	Low
4	Doctor	30	Male	7	Afrikaans	Public	High
5	Nurse	43	Female	21	English	Public	High
6	Doctor	37	Female	12	Afrikaans	Public	Medium
7	Nurse	42	Female	16	Xhosa	Public	Low
8	Nurse	48	Female	26	Afrikaans	Private	Medium
9	Nurse	43	Female	16	English	Private	High
10	Doctor	32	Female	13	English	Private	Low
11	Doctor	35	Female	10	English	Public	High
12	Doctor	37	Female	13	English	Public	Medium

Attitudes and beliefs about BBCC.

The PCPs who were interviewed reported feeling less frustrated about counselling in clinical practice, more confident in their ability to help patients and less sceptical about the value of BBCC after having participated in the training. They also reported a change in their counselling style and in the patients' responses. The patient centred approach resulted in less resistance from patients to change and improved relationships between providers and patients. There were no discernible differences between the attitude and beliefs of low, medium and high scorers.

“You don’t feel that you have to say by the end of the day, you made five patients stop smoking” (Doctor, ID: 2)

“If you put the responsibility over to the patient, I think it takes away a lot of frustration because in the end it’s the patient that needs to make the decision.” (Nurse, ID: 8)

“I never used to think that this was part of my job, but now I feel that although it’s going to be difficult where I work, I can do it” (Doctor, ID:6)

The training not only changed their attitude towards their previous counselling habits, but also made them feel valued.

“I definitely feel that I’m doing much more for the patient” (Doctor, ID: 11)

“They come back to say: ‘Sister I’m at this point’(in terms of where they are in the process of change), and then I’m so proud of myself”(Nurse, ID :7)

Although PCPs confidence improved, they experienced difficulties with some aspects of the new approach, for instance, assessing a patient’s readiness to change, and letting go of the “expert” role. Some PCPs said that they had difficulty when using scaling questions to rate the patient’s confidence and the importance of changing their behaviour. PCPs did not always feel it was appropriate to use this type of questions, and that the training was too prescriptive on how to ask this.

“One thing that I still don’t like from this, is that assessment thing, but people still struggle to give me a number, like they really struggle to, and if I push them for a number, it feels that it becomes very mechanical” (Nurse, ID:8)

“It [assessment step] becomes a very mechanic exercise, more than actually getting down to what it actually was supposed to do” (Doctor, ID:12)

Experiences of implementing the approach in clinical practice.

According to some respondents it was easy for them to default to the “expert role” because they are immersed in a culture that fosters this approach. The organisational culture was quite controlling and appeared to evoke a similar culture in the consultation whereby practitioners tried to control patient choice and reduce their sense of autonomy:

“It’s difficult for me to make that change, to let go, because you are not in control then. And I think sometimes we like to control our patients, it’s our job. ” (Nurse, ID: 8)

“You do follow your example set by your superiors, I suppose. And that does, it sets a different environment or a climate, of actually doing things like that. I mean, at the clinic, everything is very clinical at the moment, and not really much time for counselling and I really think it is a mind- set that I suppose comes from top to bottom.”(Doctor, ID: 2)

The training changed PCP's perceptions about some of the previously reported barriers to counselling, for instance, time constraints.¹⁰

"As doctors, we always, we do have limited time, but we like to hide behind that as an excuse as well, not to do behavioural counselling, or any counselling for that matter."
(Doctor, ID: 2)

"It takes a bit longer in the beginning, but as you progress it becomes easier." (Nurse, ID: 5)

"Just by spending a little more time with her, we were able to identify what was her barrier to losing weight." (Doctor, ID: 10)

In contrast, time pressures were still a significant barrier for other respondents:

"It's also with the expectation of the clinic [and the patients themselves] that you need to get this done, and the patient sitting outside knocks on the door and says: Are you not finished yet?" (Nurse, ID: 8)

Some of the other barriers that were still experienced were language issues, poor record keeping, understaffed facilities, lack of support within the facility, poor continuity of care, and lack of patient support materials:

"Language yes, because some people only want to be addressed in their home language, which is not always English. My main barrier now is the third language. I don't speak an African language, and a lot of people in the community need you to speak their language." (Nurse, ID: 9)

"I don't really get to see my patients again" (Doctor, ID: 4)

"Yes well, in my ideal world I would have all the beautiful pamphlets with me and all the tools that I need to actually do it which includes time and just the paperwork.... I'm working in different places and I don't know what the resources are in the community"
(Doctor, ID: 10)

Experiences with the course materials in clinical practice.

PCPs valued the training manual, and used it not only as a reference, but also to share information with patients during counselling. Some thought that translating the patient support leaflets into local languages would be helpful:

"You don't have to remember all of it [training manual], you can actually have the patient just look in the book as well. You can share it [patient education leaflet] with the patient, you can open the book and tell the patient, if you can read let's go through this"
(Nurse, ID: 7)

“It’s[patient education leaflet] only in English, not Xhosa or Afrikaans, you know? That was an issue for me.” (Doctor, ID: 12)

Ideas about future training programmes.

Although future training was viewed as necessary for both doctors and nurses, respondents felt that other categories of health care workers, such as community health workers and physiotherapists should be included, as they also deal with patients with these risk factors. Some thought the approach could even be used for other behaviour change such as adherence to medication

“I think it’s for all health workers, because we all deal with patients, not only nurses, not only doctors, like all the categories.” (Nurse, ID: 7)

“So I wondered if it would be an interesting thing to look at in HIV Care which is now one of our chronic illnesses, as well. Adherence is a huge problem with/for them, so having some kind of structure to follow?” (Doctor, ID: 12)

Training was viewed as helpful and necessary to up skill PCPs, although PCPs felt that in their current work environment there was limited time and few staff and that organisational support for future training for others was lacking:

“In the work that we do, we are few people, and if there is an emergency and they call me, I have to leave everything, I wish we could be more, do you understand?” (Nurse, ID: 3)

“I think they probably have a set way, but if there’s a chance that they can, [train] I think they will be open to it, there must just be time available to train.”(Doctor, ID: 6).

Training established PCPs, especially nurses, to change their current style of counselling was seen as challenging. Respondents recommended that training should be introduced at an earlier stage, because it is easier to start off with a patient centred approach, than to try to change old habits:

“I don’t see that any doctors want to change what they have been taught.” (Doctor, ID: 10)

“This is something that should be part of the curriculum of the undergraduate nursing students; because it will help them to develop this manner of dealing with the patient, and not ending up with the bad ways and then trying to rectify that, but starting off with the correct method.” (Nurse, ID: 9)

“A lot of them are old school, so I think that it will be difficult to break down the barriers, and way of thinking, and attitude towards counselling.” (Doctor, ID: 4)

3.4.4 DISCUSSION

The findings of this qualitative study are congruent with the findings of the quantitative evaluation, and demonstrated that in the short term, a once off training intervention can change PCP's perception of the importance of delivering BBCC in the South African primary care context.¹³ Training helped PCPs to recognize the worth of their possible contribution, and provided them with the necessary skills to perform BBCC, which increased their confidence in performing BBCC in actual practice.

It echoes other studies that have found that trained PCPs are less sceptical and feel more confident in their ability to deliver BBCC in clinical practice.^{18,19} BBCC training can change the approach of PCPs to delivering BBCC by changing their underlying values and beliefs.

However, although training enhances PCP's perceived efficiency and capacity to provide this counselling, implementing it into every day practice in the long term remains challenging.¹⁸ In this study, although PCP's confidence in counselling improved, and some thought that time constraints could be overcome, they still reported that understaffing, lack of support from within the facility and poor continuity of care were barriers to counselling. Within this environment some found it challenging not to default back to the directive approach of counselling. It is clear that to incorporate BBCC into everyday care, a whole systems approach is needed, that involves the patient, provider, and service organisation at different levels.^{20,21}

PCPs in the Cape Town public sector have been characterised by personal values of caring, respect, compassion and listening, all of which are well aligned with the approach to BBCC.²¹ In other words BBCC could enable these personal values to find expression in the context of the consultation. The training programme therefore enabled PCPs to develop skills and professional behaviour that were well aligned with these values. However, although training can enhance this personal alignment, this is not sufficient to embed BBCC in every day practice. Another aspect of personal alignment is in helping staff to change their own unhealthy behaviours, and be good examples of a healthy lifestyle as this has been found to enhance performance in BBCC.¹⁸

It is clear from the findings that there is a significant malalignment of personal and organisational values. Although the organisation espouses values of caring, competence, accountability, integrity, responsiveness and respect; the organisational culture is actually experienced as one of not sharing information, control, manipulation, blame, and power.²¹ This organisational culture is not congruent with the patient-centred guiding style of BBCC and may provide an unsupportive and undermining environment.⁶ Changing such organisational culture will require leadership transformation and a concerted effort to make the espoused values and culture a lived reality. Improving relationships trust and communication amongst the staff and management may be an important issue to support BBCC. It may be necessary to provide managers with the evidence for BBCC and to engage with them in a discussion about it.^{20,22,23}

In addition to creating a more supportive and committed organisational culture for BBCC it is necessary to ensure that the organisational practices and processes are also congruent with a patient-centred approach. For example it may be necessary to provide educational resources, to recognise and reward the provision of BBCC, and to commit to training all relevant staff in behaviour change counselling skills. Although there are many competing organizational demands in the daily operation of primary care centres, ongoing support for PCPs to offer BBCC should be prioritised.²⁰ Ultimately piloting BBCC in different clinics may be a step towards widespread implementation.^{18,24,25}

Nurses play a vital role in service delivery in primary care facilities and local and international findings demonstrate that nurses can be effective in providing BBCC.²⁰ However, a local culture of surveillance in primary care is dictated by bureaucracies in an attempt to ensure accountability.^{21,26} Task orientation is entrenched in nursing practice because it enables nurse managers to measure and to some extent control nurse's performance and because it enables distance between the nurse and the patient. This system of discipline and scrutiny in which nurses are regulated, may be internalised and lead to a similar approach to patients, which inhibits the caring holistic approach that is integral to BBCC.²⁶ To create this caring culture in healthcare institutions, we may need a shift away from fragmentation of nurses work into tasks. Clinical governance, which focuses on measuring and improving the quality of care, should find ways of not just quantifying counselling in a tick-box approach, but of valuing and assessing the nature and quality of counselling.

Evidence has shown that although integration of a system of chronic care in primary care facilities with limited financial resources is feasible, weak national systems often make it difficult to implement and sustain these interventions.^{27,28} Although BBCC integrated into everyday routine primary care has been prioritized by the NDOH, this study demonstrates the gap between national aspirations and the realities of incorporating BBCC into everyday service delivery.³ Patient centred care should be the central ambition of chronic care development strategies and policies that work towards outcomes that matter to patients, and not just to programmes or disease-orientated guidelines.

The findings of this study suggests that training should be incorporated early on, preferably into undergraduate curricula of PCPs for both nurses and doctors, to ensure that behaviour change counselling skills are embedded from the start. Existing PCPs could be offered training as part of continued professional development programmes Internationally, the importance of incorporating BBCC training into curricula for PCPs, has been recognised as a future step in the struggle against NCDs.^{29,30,31}

This study forms part of a bigger project, the *ichange4health* programme, which has helped to further develop the materials and train trainers from Departments of Family Medicine and Primary Care throughout South Africa.⁶ These trainers are now able to train medical students, general practitioners and other family physicians in their respective areas.

Training PCPs in behaviour change counselling skills can have broader application beyond the risky lifestyle behaviours associated with NCDs. For example consultations involving risky sexual behaviours, intimate partner violence and problems with adherence to chronic medication could benefit from such a skills set. Future research should look at developing a comprehensive approach to patient education and counselling that includes BBCC as one component.

One of the limitations of this study was the limited follow up period in clinical practice. If interviewees were interviewed at a later time, it could have led to different responses. Implementing and improving a new skill over time is unlikely in a culture where limited support and feedback on performance is available and therefore one might anticipate a gradual loss of motivation and positivity. Future research is intended to evaluate the effect of providing on going on-line support after training and evaluating retention of the approach to BBCC over a longer time period. As the researcher had been primarily involved in training and interviewing the PCPs for pragmatic reasons, there could have been obsequiousness bias in the responses given. Previous research conducted by the researcher on general practitioners' poor management of overweight and/or obese patients, could have had a negative influence on her perception of the PCP's efficacy in counselling.¹⁶ However, this study was a prospective study of patient files, with general practitioners in the private sector, and did not primarily include any aspects of counselling training effects. Also, the fact that the interview process, analysis and interpretation were, supervised by the other co-authors would have mitigated this influence.

3.4.5 CONCLUSION

This study showed that an eight hour training intervention for PCPs on BBCC changed PCPs perception of its importance, their ability to offer BBCC, and their confidence to overcome certain barriers to implementation. Nevertheless significant barriers to implementation remained such as language, time constraints, poor continuity of care, an unsupportive organisational culture, and lack of educational resources. In future, training should be incorporated into nurses, doctors and other primary care provider's basic curricula in order to provide a stronger foundation. However, to fully embed and sustain BBCC a whole system approach may be needed and not just a commitment to training.

3.4.6 LIST OF ABBREVIATIONS

BBCC; Brief behaviour change counselling

LMIC; Low and middle income countries

NDOH; National Department of Health

NCD's; Non communicable diseases

PCP; Primary care providers

3.4.7 COMPETING INTERESTS

The authors declare that they have no competing interests.

3.4.8 AUTHOR CONTRIBUTIONS

ZM interviewed, analysed and interpreted the qualitative data. BM and KE-M conceptualised and supervised the research process. All of the authors approved the final manuscript.

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CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

In this chapter I discuss the conclusions of the thesis in relation to each of the initial objectives and to a conceptual framework that integrates the findings and from which I draw key recommendations about future actions related to BBCC in the South African context.

4.2 CONCLUSIONS RELATED TO THE OBJECTIVES

The aim of this research was to analyse the current situation, design, develop, implement and evaluate the effectiveness of a training intervention for PCPs to offer patients BBCC on the lifestyle risk factors associated with NCDs. In this section I will conclude on the findings in relation to each of the original objectives.

4.2.1: Objective 1

Undertake a situational analysis of the current training courses and approaches to behaviour change counselling amongst clinical nurse practitioners and primary care doctors in the Western Cape.

Current training on behaviour change counselling for primary care providers in the Western Cape is not sufficient to achieve competence in clinical practice. Current training is limited by time constraints and is not integrated throughout the curriculum; there is a focus on theory rather than modelling and practice, and a lack of assessment. Although PCPs accept their role in delivering BBCC, and feel that it is important to deliver this counselling, they seem sceptical about their ability to assist patients to change risky behaviours. Besides insufficient training, several other factors contribute to PCPs lack of confidence in delivering BBCC in clinical practice. Primary care providers' current experience of counselling in practice tends to be discouraging and challenging, in view of the numerous barriers that they face. Some of these barriers include a lack of patient education materials, time and language constraints, poor continuity of care and record keeping, conflicting lifestyle messages and an unsupportive organisational culture. It is therefore clear that there was a need to revise the approach to training to ensure that skills can be learnt and transferred to the clinical setting.

4.2.2: Objective 2

Design a best practice BBCC training programme to meet the needs of PCPs, and to develop the structure and content of the training intervention, as well as the skills and resources needed to deliver this programme, and to implement it.

In an attempt to improve the current training programmes, a best practice BBCC training programme was designed, developed and implemented in our context, targeting either clinical nurse practitioners or primary care doctors. The training programme was designed to target all four risk factors associated with NCDs. It was based on a conceptual model that combined the 5 As (Ask, Alert, Assess, Assist and Arrange) with a guiding style derived from motivational interviewing. The 8-hour training programme combined theory, modelling and simulated practice with feedback. The development of the programme included the development of training materials, as well as the skills and resources needed to implement it.

4.2.3: Objective 3

Evaluate the effect of the training intervention on the counselling behaviour of the PCP's immediately after the training intervention.

The training programme resulted in a significant change in the approach to counselling in both clinical nurse practitioners and primary care doctors, immediately after training. PCPs significantly improved in their ability to utilise the 5 A steps and to adopt a guiding style. Evaluation showed that for the group as a whole, they moved towards a guiding style as a result of the training in addition to using the structure of the 5 As stepwise approach.

4.2.4: Objective 4

Evaluate the extent to which BBCC was incorporated by the PCP's into actual clinical practice.

This evaluation was particularly important, because it showed that PCPs retained skills over time in every day clinical practice. The study did not aim to evaluate the effect of the intervention on patient behaviours or health outcomes, but looked at whether training changed PCPs approach and skills to deliver patient-centred counselling. The training programme was effective at changing PCPs clinical practice, at least in the short term. The training programme develop the approach of the guiding style, and PCPs retained it in clinical practice. For each of the steps of the 5 As, there was no significant difference between the performance in clinical practice of the doctors vs. the clinical nurse practitioners, except for the assessment of readiness to change in which the clinical nurse practitioners was significantly lower than the doctors.

4.2.5: Objective 5

Explore the PCP's perspective on how feasible it was to implement the training in clinical practice.

Further qualitative evaluation showed that training also changed PCPs perception of their ability to offer BBCC, and increased their confidence to overcome certain barriers to implementation, for instance the barrier of time constraints. Remaining barriers included understaffing, lack of managerial support and poor continuity of care. It is clear that although training enabled PCPs to deliver BBCC effectively, and increased their confidence, delivering BBCC in our clinical environment remains challenging. Training alone is not enough to ensure implementation of BBCC at the coal face where it is actually intended to be delivered.

To incorporate BBCC into everyday care a whole systems approach is needed. The successful implementation of BBCC does not only require training PCPs to change their counselling behaviours, but also requires change at other levels. For example, the current organisational culture is not congruent with the patient-centred guiding style of BBCC. Asking PCPs to embody values of trust, respect and openness in an environment where they are experiencing manipulation, blame and control, is unrealistic. It is possible that to incorporate BBCC into everyday care, not only training, but also a change in the underlying supportive culture in primary care settings is needed.

4.3 CONCLUSIONS RELATED TO CONCEPTUAL FRAMEWORK

The conclusions of this thesis can also be summarised by use of the integral model for whole systems thinking as illustrated in Figure 4.1.¹ In this model the four quadrants are created by a matrix that combines internal and external aspects of the system with individual and collective contributions to the system. The internal world of the system is often hidden or intangible and can be understood as the personal and collective values and beliefs. The external world is visible and observed as individual behaviour and as collective processes, procedures and rules. Each of these quadrants is related to the conclusions of the thesis below.

a. Character: The PCPs personal values and beliefs.

The training programme changed PCP's perceptions of their potential contribution in delivering BBCC and their beliefs about the importance of delivering the counselling. Once they realised the importance of this, training increased their confidence to deliver counselling. This can also be explained by saying that the training changed their perception from being sceptical to "I can do this!".

b. Personality: The PCPs actions and behaviours.

The evaluation of the PCPs to deliver BBCC in actual practice showed that once they believed that they could do it, they changed their approach to counselling and were able to effectively deliver counselling in the short term. This can be explained by saying that their behaviour changed to "I am doing this".

c. Culture: The primary care system's cultural values, beliefs and customs.

Training programmes for primary care providers do not currently prioritise BBCC in their curriculum, which reflects an underlying scepticism about its feasibility and effectiveness. Likewise facility and clinical managers appear unsupportive of BBCC in clinical practice and the actual organisational values are incongruent with the underlying values of BBCC.

d. Society: The primary care system's processes, actions and behaviours.

Many organisational barriers exist to implementation of BBCC in clinical practice such as a lack of patient education materials and procedures which value numbers of patients seen, efficiency and a tick-list approach to delivering educational messages more than the quality and effectiveness of the interaction. Processes do not support continuity of care or in-depth record keeping on the goals or outcomes of counselling. The overall organisational culture is characterised by poor communication and dysfunctional relationships between staff, which is incongruent with and unsupportive of the guiding style of counselling and patient-centeredness.

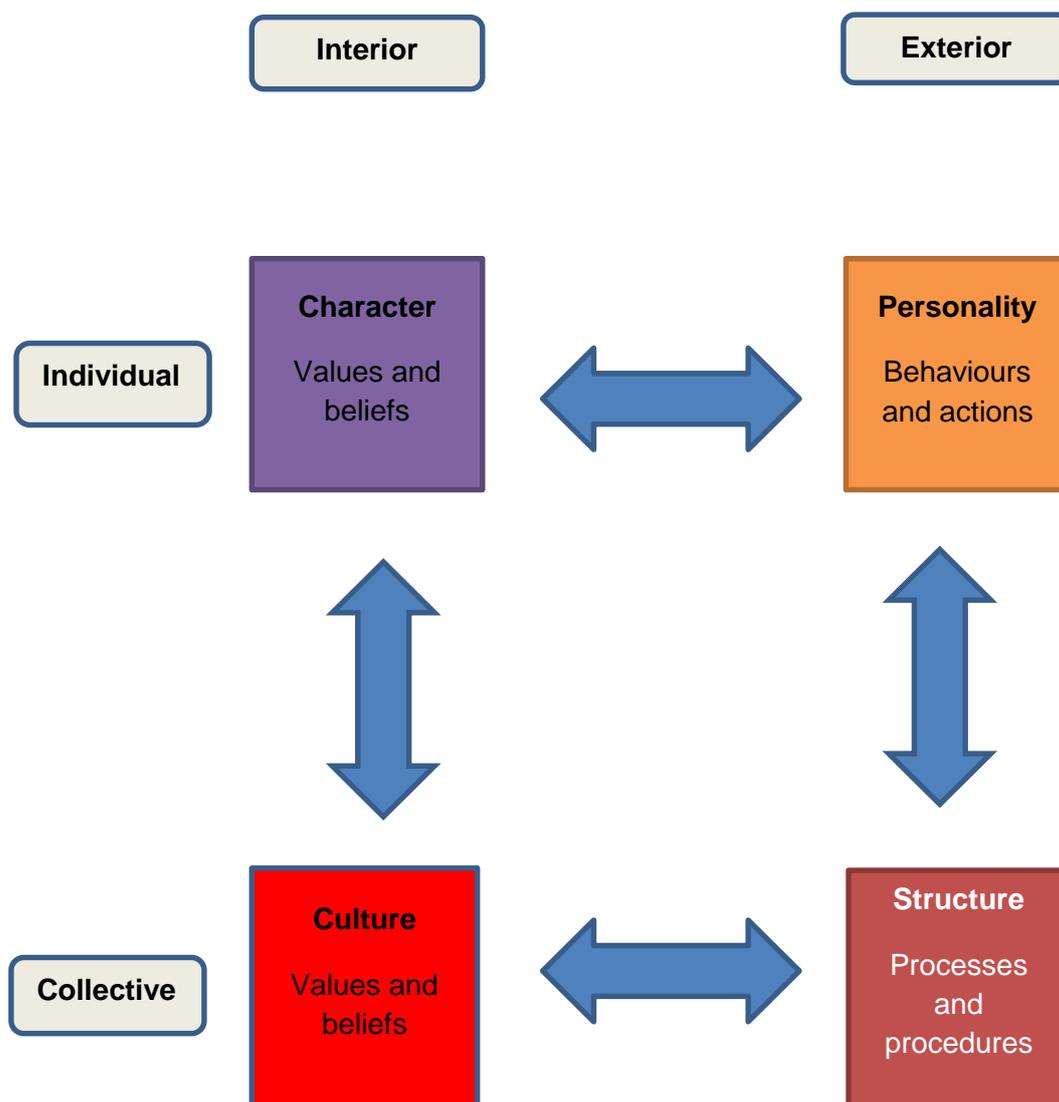


Figure 4.1: Four quadrants of primary care systems

4.4 RECOMMENDATIONS

In the integral model (Figure 4.1) well-functioning systems are those in which there is congruence and synergy between all four quadrants. Figure 4.2 illustrates the different types of alignment between the quadrants that is necessary for the system to function well. The recommendations arising from this thesis for the public sector services have been related to each of these different forms of alignment.

4.4.1 Personal alignment

Personal alignment refers to the congruence between one's personal values and beliefs and actual behaviour. It is clear that training is necessary to help PCPs align their own values and beliefs about BBCC with their counselling behaviour. Recommendations to improve future training and increase personal alignment:

- The 8-hour training should be further developed to include follow up and ongoing support after training.
- The training should be included in the under- and post-graduate curriculum of doctors and in the training of clinical nurse practitioners. Competency should be part of summative assessment and should be reinforced throughout the rest of the programme.
- Training programmes should particularly focus on skills needed to assess readiness to change as this is the step most likely to be forgotten or avoided during clinical practice.
- For existing PCPs training should be offered as part of continuing professional development.

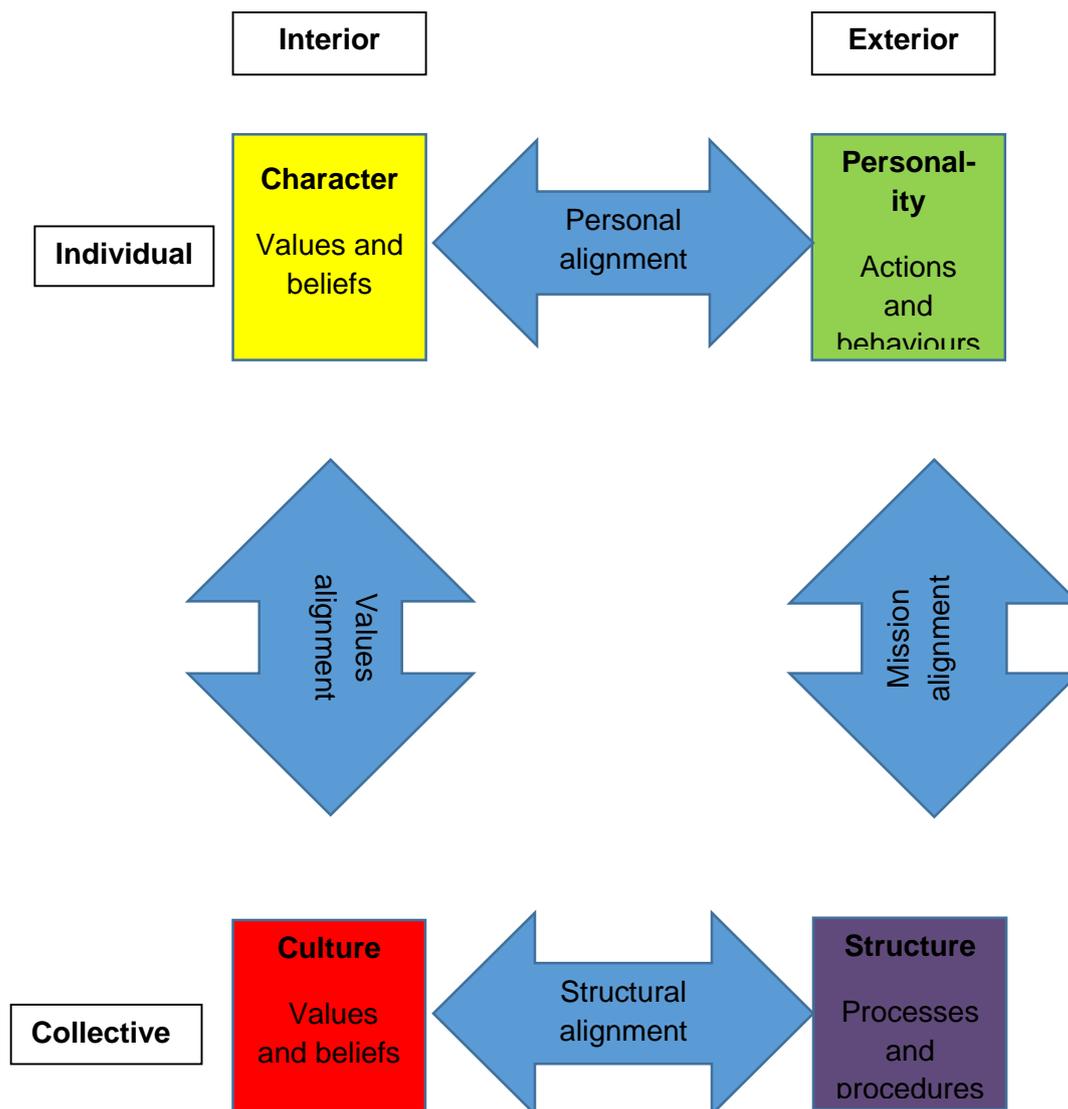


Figure 4.2: Alignment required to implement BCC in the South African primary care system

4.4.2 Structural alignment

Structural alignment refers to congruence between the values and beliefs of the organisation with the actual processes, procedures and rules that are enforced or managed. Recommendations to improve structural alignment:

- Ongoing, on-site feedback and supervision should be provided in the clinical training setting.
- Clinical governance activities and performance management processes should support the delivery of quality BBCC and not just measure the percentage of patients that receive an educational message or advice in whatever format
- Processes to support relational continuity of care with a PCP should be developed
- Records should enable recording of BBCC in some detail to support continuity of care
- Resources, such as patient information leaflets should be provided in different languages.

4.4.3 Values alignment.

Values alignment refers to the extent to which the personal values and beliefs of the staff are congruent with the organisational values and beliefs. The findings of this study in conjunction with the findings of other studies conducted locally suggest that staff hold personal values that are congruent with BBCC (e.g. caring, compassion, trust, respect, commitment), but which are often inhibited within the organisation.² The espoused values of the organisation are congruent with BBCC (e.g. caring, competence, accountability, integrity, responsiveness and respect) and vision 2030 is clearly supportive, but the actual values of the organisation currently experienced (e.g. control, not sharing information, cost reduction) are incongruent with effective communication and relationships.³ Recommendations to align values:

- Raise awareness of the need and evidence for BBCC amongst primary care providers and decision-makers in order to change current beliefs and assumptions.
- Transform the organisational culture and particularly the leadership to be more congruent with the spirit of patient-centeredness (e.g. transparency, respect, open communication, caring).

4.4.4 Mission alignment

Mission alignment refers to the extent to which the PCPs sense of purpose is aligned with the duties they are asked to perform. In other words PCPs need to feel that the primary care system is on track, that they are making a worthwhile contribution, and are able to deliver on what is expected of them. Recommendations to align mission are:

- Ensure that all relevant health workers are trained in BBCC and share the same understanding of lifestyle modification messages
- Create a structured and systematic approach to patient education and counselling for chronic diseases in primary care, that includes BBCC from PCPs.⁴

4.4.5 Future research

Lastly I would like to add some recommendations on unanswered questions for future researchers. Future research could focus on:

- Further evaluating the psychometric properties of the tool we developed to evaluate the 5 As in our BBCC model
- Evaluating the role of the new MITI 4 assessment tool that was recently published versus the MITI 3.1 in terms of its use for evaluating brief interventions.⁵
- Evaluating to what extent the new BBCC skills are maintained over a longer time period.
- Explore the differences in baseline skills, responses to training and retention of skills between nurse practitioners and doctors.
- Evaluate whether the shift in counselling style in our setting is sufficient to improve behavioural, clinical or health outcomes in the patients.
- Explore practical ways of reinforcing the training during clinical practice, and offering ongoing support and feedback.
- Design and develop BBCC training programmes for other PCPs such as community health workers
- Evaluate the incorporation of BBCC into a structured and systematic approach to patient education and counselling for chronic diseases in primary care that includes other interventions such as group counselling.
- Explore patient's perspectives and preferences about the counselling intervention

4.5 IMPACT OF THE FINDINGS

The Chronic Diseases Initiative for Africa, through a programme entitled *ichange4health*, helped to further develop the materials and train trainers from Departments of Family Medicine and Primary Care throughout South Africa. In addition a training manual that explains the approach in detail and patient education materials on all four NCD risk behaviours has been made freely available through the website (www.ichange4health.co.za) and is given in the Appendices.⁶

The National Department of Health requested a policy brief on the model of BBCC after it was presented at the Chronic Diseases Initiative for Africa research day. This will be considered for integration into policy and practice so that patients with chronic diseases and/or their risk factors are offered effective education and counselling, as well as appropriate educational materials, which they can take home.

The research has been presented in the form of a workshop or presentation both locally and in other countries. During 2014, it was presented at the SA National Family Practitioners Conference, the Pain Society of SA, the National Rural Health Conference, the 2nd Botswana National Family Medicine and Primary Health Care Conference, the National Department of Health in Namibia, the

Medicross Annual Congress, and the SHAWCO Training at the University of Cape Town. In 2015 the researcher was invited as a guest speaker to present at the SA Continuing Nutrition Education Congress and will present new findings at the SA National Family Practitioners Conference in August.

The four articles included in Chapter 3 have been published in international journals, during 2015. These journals includes the African Journal of Primary Care and Family Medicine, Patient Education and Counselling, and BMC Family Medicine journals.

4.6 CONCLUSION

In this chapter I have brought the thesis to a conclusion and summarised the new knowledge obtained on each of the original objectives. I have presented recommendations that arise from a conceptual framework that embraces whole system change. This Chapter concluded with a description of what has been achieved with this research so far.

4.7 REFERENCES

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ADDENDUMS

A. ETHICAL APPROVAL LETTER

ETHICS REFERENCE NO: N11/11/321

01 March 2012

At a meeting of the Health Research Ethics Committee that was held on 30 November 2011, the above project was approved on condition that further information is submitted. This information was supplied and the project was finally approved on 27 February 2012 for a period of one year from this date. This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in ALL future correspondence. Please note that a progress report (obtainable on the website of our Division: www.sun.ac.za/rds) should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit. Translations of the consent document in the languages applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372

Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health). Please note that for research at primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Hélène Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

RE : APPROVED

The development, implementation and evaluation of a training intervention for primary health care providers on brief behaviour change counselling and assessment of the provider's competency in delivering this counselling intervention.

05 March 2012

B. GOVERNMENT APPROVAL LETTER**STRATEGY & HEALTH SUPPORT**

Health.Research@westerncape.gov.za
 Tel: +27 21 483 6857 Fax: +27 21 493 9595
 5th Floor, Nelson Mandela House, 8 Robbink Street, Cape Town, 8001
www.westerncape.gov.za

REFERENCE: RP 029/2013
 ENQUIRIES: Ms Charlene Roderick

Box 32175
 Camps Bay
 8040

For attention: **Prof Bob Mash, Dr Kathy Everett-Murphy and Dr Zera Malan**

Re: The development, implementation and evaluation of a training intervention for primary health care providers on brief behaviour change counselling, and assessment of the provider's competency in delivering this counselling intervention.

Thank you for submitting your proposal to undertake the above-mentioned study. We are pleased to inform you that the department has granted you approval for your research.

Please contact the following people to assist you with any further enquiries in accessing the following sites:

Eastern / Khayelitsha	C Steyn	Contact No. 021 360 4713
Mitchell's Plain CHC	A Isaacs	Contact No. 021 370 5007
Gugulethu CHC	K Murle	Contact No. 921 633 0020
Karl Bremer	J Joemat	Contact No. 021 918 1545
Hanover Park CHC	L Benjamin	Contact No. 021 692 4972

Kindly ensure that the following are adhered to:

1. Arrangements can be made with managers, providing that normal activities at requested facilities are not interrupted.
2. Researchers, in accessing provincial health facilities, are expressing consent to provide the department with an electronic copy of the final report within six months of completion of research. This can be submitted to the provincial Research Co-ordinator (Health.Research@westerncape.gov.za).
3. The reference number above should be quoted in all future correspondence.

Yours sincerely

DR NT Naledi
DIRECTOR: HEALTH IMPACT ASSESSMENT

DATE:

CC DR A HAWKRIDGE
 CC MS P OLCKERS

DIRECTOR: EASTERN / KHAYELITSHA
 DIRECTOR: KLIPFONTIEN / MITCHELL'S LAIN

C. PARTICIPANT INFORMED CONSENT FORM (1)

This form was used for interviewees, before they were interviewed for the situational analysis.

PARTICIPANT INFORMATION LEAFLET

TITLE OF THE RESEARCH PROJECT: The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and assessment of the primary health care workers competency in delivering this counselling intervention.

REFERENCE NUMBER: N11/11/321

PRINCIPAL INVESTIGATOR: Dr Zelra Malan

ADDRESS: Division of Family Medicine and Primary Care, University of Stellenbosch, Box 19063, Tygerberg, 7505.

CONTACT NUMBER: 0823260041

Dear Colleague

My name is Dr Zelra Malan, and I am a family physician. I would like to invite you to participate in a research project that aims to investigate the approach to brief behaviour change counselling amongst the current training courses for primary health care nurses and family physician registrars at the Universities of Stellenbosch and Cape Town.

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committees (HREC) at Stellenbosch and Cape Town Universities (Tel: 021 938 9207/9677) and will be conducted according to accepted and applicable National and International ethical guidelines and principles, including those of the international Declaration of Helsinki October 2008.

Primary health care workers are in an excellent position to counsel patients on risky life style behaviours (smoking, drinking, unhealthy diet and lack of exercise). During the first phase, this study aims to undertake a situational analysis and critical review of the current training and lifestyle related counselling practices of primary health care nurses and family physician registrars.

You have been selected as a key informant and if you consent will be expected to participate in an interview. The 30 minute interview will take place in your office at the campus where you are situated. The interviewer will explore your experience with behaviour change counselling, your perceptions of factors that enable or obstruct such counselling, your opinion of the current training and reaction to the training module being proposed as part of this research project.

The interview will be audio taped and the transcript used for data analysis. Your confidentiality and privacy will be protected in all data analysis and reporting.

If you are willing to participate in this study please sign the attached Declaration of Consent.

Yours sincerely

Dr Zelra Malan

Principal Investigator HREC Information Leaflet and Consent. Alternative template. V1.Nov 2009 2

Declaration by participant

By signing below, I agree to take part in a research study entitled :

The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and assessment of the primary health care workers competency in delivering this counselling intervention.

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) On (*date*)

Signature of participant

Signature of witness Signature of researcher

D. PARTICIPANT INFORMED CONSENT FORM. (2)

This form was used for doctors that underwent the training, and nurses received a similar consent form

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and assessment of the primary health care workers competency in delivering this counselling intervention.

REFERENCE NUMBER: N11/11/321

PRINCIPAL INVESTIGATOR: Dr Zelra Malan

ADDRESS: Division of Family Medicine and Primary Care, University of Stellenbosch, Box 19063, Tygerberg, 7505.

CONTACT NUMBER 0823260041:

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff or doctor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committees at Stellenbosch and Cape Town Universities and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?

Primary care providers are in an excellent position to counsel patients on risky life style behaviours (smoking, drinking, unhealthy diet and lack of exercise). This study intends to introduce a new approach to brief behaviour change counselling in the training of primary care nurses and family physicians. This approach is based on the 5 A structure (Ask, Alert, Agree, Assist, and Arrange) and a guiding style of communication based on motivational interviewing. The study aims to evaluate if primary care providers adopt the new approach through the training course and whether they implement it in their clinical practice.

Why have you been invited to participate?

Family physician registrars:

You are a student, enrolled on the Masters of Medicine Degree in Family Medicine at Stellenbosch or Cape Town University and in your 2nd year of study. You will receive training in this brief behaviour change counselling as part of the course. Evaluation will focus on your competency in the new approach after your training and whether you use the approach when you return to your clinical work.

Primary Health Care Doctors:

You are a doctor working in Primary Health Care. You will receive this training as part of a short course at Stellenbosch University. Evaluation will focus on your competency in HREC General ICF Version 2, July 2009

the new approach after your training, and whether you use the approach when you return to your clinical work.

What will your responsibilities be?

If you are one of the 20 doctors that have agreed to participate in the research project, you will be asked to counsel a standardised patient before and after training. The consultation will be audiotaped. When you return to your clinical work you will also be expected to consult a standardized patient, who will come to you as part of your usual clinical practice. You will consult as normal, and will not be made aware if the patient you consult is a regular or a standardized patient.

Will you benefit from taking part in this research?

You will benefit from this training, by obtaining the skills to deliver brief behaviour change counselling based on best evidence available, and your patients may benefit from this because evidence shows that brief behaviour change counselling from a primary health care provider lead to 5-15% of patients changing their behaviour.

Are there risks involved in your taking part in this research?

There are no risks involved if you take part in this study

If you do not agree to take part, what alternatives do you have?

If you decide not to take part you will still receive the training as part of the course, but will not need to participate in any of the research related activities (i.e. assessment of consultations). The fees for these participants will be R1500.00

Who will have access to your study data?

The information obtained will be protected, and treated as confidential. The identity of all participants will remain anonymous. The three researchers on this study, (Dr Z Malan researcher, Prof Bob Mash the supervisor of the study, and Dr Kathy Everett Murphy the co-supervisor) will be the only people who will have access to the information.

Will you be paid to take part in this study and are there any costs involved?

You will not be remunerated for participating in this study and will not incur any costs by participating in the study.

Is there anything else that you should know or do?

You can contact the researcher on 0823260041 if you have any other queries. You can contact the Health Research Ethics Committee at 021-938 9207/9677 if you have any concerns or complaints that have not been adequately addressed by your study doctor.

You will receive a copy of this information and consent form for your own records.

Declaration by participant

By signing below, I agree to take part in a research study entitled.

The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and HREC General ICF Version 2, July 2009

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntary and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

E. PARTICIPANT INFORMED CONSENT (3).

This form was used for participants that were interviewed as part of the qualitative evaluation of the training intervention in clinical practice

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and assessment of the primary health care workers competency in delivering this counselling intervention.

REFERENCE NUMBER:N11/11/321

PRINCIPAL INVESTIGATOR: Dr Zelra Malan

ADDRESS: Division of Family Medicine and Primary Care, University of Stellenbosch, Box 19063, Tygerberg, 7505.

CONTACT NUMBER 0823260041:

Dear Colleague

My name is Zelra Malan, and I am a family physician. I would like to invite you to participate in a research project that aims to investigate the approach to brief behaviour change counselling amongst the current training courses for primary health care providers.

Please take some time to read the information presented here, which will explain the details of this project, and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Health Research Ethics Committees (HREC) at Stellenbosch and Cape Town Universities (Tel: 021 938 9207/9677) and will be conducted according to accepted and applicable National and International ethical guidelines and principles, including those of the international Declaration of Helsinki October 2008.

Primary health care workers are in an excellent position to counsel patients on risky life style behaviours (smoking, drinking, unhealthy diet and lack of exercise). You have attended a workshop on brief behaviour change counselling recently, as part of this study. You have been selected to participate in an interview if you consent. This 30 minute interview will take place at the clinic where you work, at a pre- arranged time that is convenient for you. The interviewer will explore your experiences, feelings, beliefs and expectations about Brief Behaviour Change Counselling before and after the training.

The interview will be audio taped and the transcript used for data analysis. Your confidentiality and privacy will be protected in all data analysis and reporting.

If you are willing to participate in this study please sign the attached Declaration of Consent.

Yours sincerely

Dr Zelra Malan

Principal Investigator

Declaration by participant

By signing below, I agree to take part in a research study entitled:

The development, implementation and evaluation of a training intervention for primary health care workers on brief behaviour change counselling and assessment of the primary health care workers competency in delivering this counselling intervention.

F. INTERVIEW GUIDE WITH KEY INFORMANTS AS PART OF THE SITUATIONAL ANALYSIS

1. Introduction

The purpose of this interview is to undertake a situational analysis and critical review of the current training and practice of behaviour change counselling skills of family physician registrars at this university. The supervisor of this study is Professor Bob Mash, and the co-supervisor is Doctor Kathy Everett-Murphy, who is from the CDIA at the University of Cape Town. You have been identified as a key informant in this study. The study has been approved by the HREC Stellenbosch University. I would like to thank you for agreeing to this interview, and ask your permission to record the interview. All information will be regarded as confidential as explained in this consent form.

2. Key question

Could you tell me about the current teaching modules on brief behaviour change counselling (BBCC) in the curriculum for the registrars, and your opinion of the training and its effectiveness?

3. Areas to explore

- Prior experience of training students in BBCC
- Beliefs about the effectiveness of the current training
- Beliefs of the long term effectiveness of the current training in a clinical setting(barriers)
- Attitude towards the introduction of a new training module in the curriculum
- Prior experience/knowledge of the combined 5 As/ Motivational Interviewing approach to counselling

4. Closing question

Do you have any additional comments/information/recommendations?

5. Summary

- Summarise major comments
- Did we cover the major topics/ applicable areas?
- Thank you for the valuable time

G. FEEDBACK FORM FOR PARTICIPANTS

Feedback

Dear participant, could you spend a few minutes to complete the following questions on the behaviour change counselling workshop training that you have attended?

- During this training, what went well for you and why?.....
.....
.....
.....
- What did not work well for you and why?.....
.....
.....
.....
- In your opinion did we meet the learning outcomes?..... Please explain your answer.....
.....
.....
.....
- Will this change your future practice?..... Please explain why and how.....
.....
.....
.....
- Any suggestions to improve this activity in the future?..... Please explain.....
.....
.....
.....

Thank you for your valuable time and input!

H. INTERVIEW GUIDE FOR AFTER TRAINING

Introduction

The purpose of this interview is to explore your beliefs, attitude, expectations and experiences with brief behaviour change counselling before and after the training workshop that you have attended. I would like to thank you for agreeing to this interview, and ask your permission to tape record the interview. All information will be regarded as confidential as explained in the consent form.

Key Question

Could you tell me more about your feelings regarding brief behaviour change counselling before and after the training?

Areas to explore

- Prior beliefs/experiences/attitude/expectations about BBCC(before training)
- Current beliefs/experiences/attitude/expectations about BBCC(after training)
- Perceived barriers to delivery of BBCC in clinical practice before and after the training
- Beliefs of the effectiveness of the training
- Attitude towards future training of other health care providers
- Suggestions about improving the training intervention
- Opportunities and plans for use of BBCC in their practice

Closing question

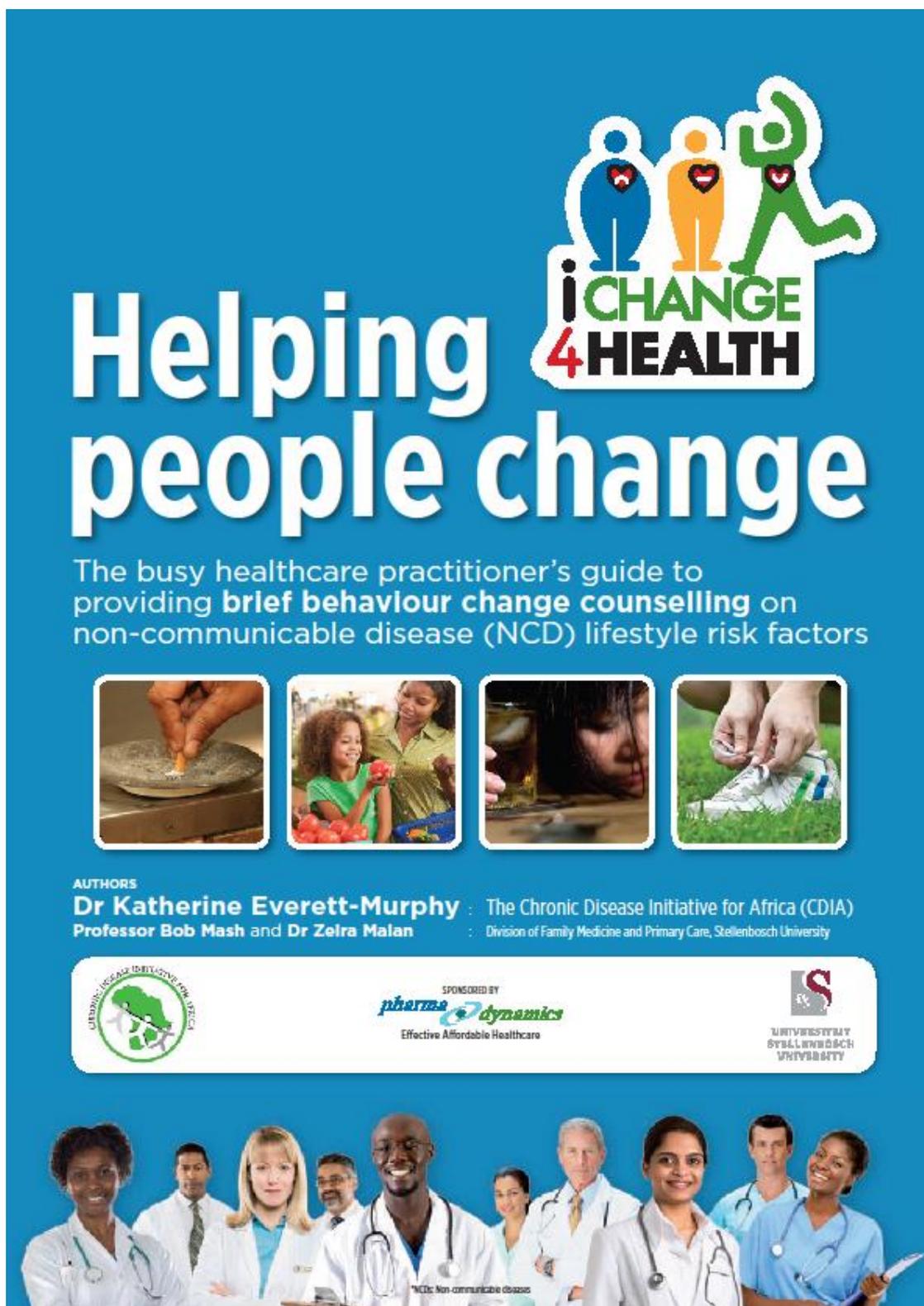
Do you have any additional comments/information /recommendations?

Summary

- Summarise major comments
- Thank you for valuable time
- Send thank you not

I. TRAINING MANUAL

Please turn the page for the complete manual.



Helping people change

The busy healthcare practitioner's guide to providing **brief behaviour change counselling** on non-communicable disease (NCD) lifestyle risk factors

AUTHORS
Dr Katherine Everett-Murphy : The Chronic Disease Initiative for Africa (CDIA)
Professor Bob Mash and Dr Zelra Malan : Division of Family Medicine and Primary Care, Stellenbosch University

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NCD: Non-communicable diseases