Promoting Change in Multiple Health Risk Behaviours: Including Brief Advice for Alcohol Harm Reduction in the English Stop Smoking Service

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Behavioural Interventions to Reduce Alcohol Consumption: Are there differences in effectiveness for adult Black and Ethnic Minority comparative to White Service Users?

A Systematic Review

Systematic Review

Abstract

Background**:** Given the evidence that Black and Minority Ethnic (BME) groups experience greater alcohol related harm comparative to white alcohol misusers, there is a need to understand the comparative effectiveness of alcohol treatment services for these groups.

Objective**:** To examine if there are differences in the effectiveness of behavioural interventions to reduce alcohol consumption in adults from BME communities comparative to white service users.

Search strategy databases**:** Electronic databases were searched for published (i.e. Embase) and grey literature (i.e. Alcohol Concern) examining ethnic/race differences (comparative to white) in alcohol consumption following treatment from publicly available adult alcohol misuse behaviour modification programmes. Studies examining exclusively psychiatric, prison or single sex populations were excluded from this review.

Data collection and analysis**:** Peer-review solutions were applied to reduce any selection bias in the studies included in the review.

Main results**:** Eight studies met the inclusion criteria for review. All were conducted in the USA and used longitudinal, comparative, repeated measures designs. All examined variance in outcomes following alcohol treatment programmes, Black, including African American, Hispanic and Native Americans were the only BME populations examined in the studies included in the review. The comparison of the effectiveness of treatments across studies was inconclusive due to the different phases and treatments explored by each.

Conclusion**:** There is a need for further research examining differences in outcomes in relation to specific treatment phase and treatment content. Comparative analysis should also consider differences in social constructs (for example, the role of and relationship with the family) and acculturation rather than using only 'ethnic group' as the basis for comparison.

Background

Alcohol related harm and ethnic differences

The harmful consequences of alcohol misuse are well publicised, impacting upon morbidity and mortality, from direct physiological life threatening liver cirrhosis (Walsh. 2000) to indirect consequences, for example, sensory impairment, which may lead to fatal road traffic or other accidents (Ferrera et al. 1993). Review of moderators and predictors of alcohol related harm indicate Black and Minority Ethnic (BME) grouping as a direct predictor of liver cirrhosis prevalence (Stinson et al. 2001) and mortality following alcohol use (Costello. 2006). This relationship is displayed in both direct and also attributable causes of mortality.

A review of American epidemiological data indicates intimate partner violence to be twice as high in Black than Hispanic or Whites, and variations in driving under the influence arrests four times higher than the rates for Black or White Groups (Caetano. 2003), consequential trauma is exacerbated as alcohol use is the most prominent predictor of seatbelt wearing (Gross et al. 2007).

Projections of current data indicate a growing BME population residing in Western society, a population with the greatest reported health inequalities in the UK (Harriss, 2007). Data from the USA indicate over-representation in publicly available alcohol treatment programmes by BME communities (Kaskutas et al. 1998).There is clear evidence for differences for both direct (O'keefe et al. 2007; White et al. 2002) and attributable alcohol related harm (Berrios & Grady. 1991; Fabbri et al. 2002) across BME groups in both countries.

In response to evidence charting the alarming impacts of alcohol misuse, the first Alcohol Harm Reduction Strategy for England was produced in 2004. The strategy incorporates 4 key elements for reducing alcohol-related harm: 1. education, and communication, 2. identification and treatment of those at risk, 3. alcohol-related crime and disorder, and 4. supply and industry responsibility. As part of this strategy, the Department of Health, England,

Centre for Information produced guidance on designing and delivering alcohol interventions; *Models of Care for the treatment of Alcohol Misuse (MoCAM) (2006).* MoCAM highlighted a gap in knowledge and understanding regarding the relative effectiveness of existing treatments for those belonging to different BME groups, particularly given the evidence of the success of these interventions for White Caucasian populations. MoCAM called for the need to understand differences in treatment effectiveness within BME groups and in comparison to those from white-Caucasian communities in order to facilitate the development and provision of tailored and effective interventions.

Effectiveness of behavioural intervention and ethnic differences

In examination of ethnic differences in service effectiveness, differences in service utilisation behaviours have been witnessed across groups (Ben-Shlomono et al. 2007). The impact of migration to high-income economies and the adjustment to a different culture, referred to as acculturation, has been widely reported to have a negative impact on health related behaviours (Hawkins et al. 2008). The consequential change in beliefs and norms embedded in culture have an undisputed impact on drinking behaviours (Flores. 1985). For services to address differences in health-risk behaviours across ethnicity, it appears that consideration also needs to be given to differences in response in treatment across ethnic group and the consequential effectiveness of intervention to achieve desired outcome; a reduction of alcohol use (Fu et al. 2005).

Ethnic differences in alcohol treatment service utilisation behaviours have been reported to be dependent on variance in treatment components available (Caetano. 2003), suggesting different BME groups may require a menu of intervention components to tailor interventions appropriately. However, it remains unclear which elements are crucial for optimal outcomes across different treatments.

In order to address differences in service utilisation behaviours across ethnicity, it has been reported that ethnicity must not be examined as a discrete component, but instead that the multi-faceted construct of ethnicity

should be examined, inclusive of variation in social constructs and personal beliefs (White. 2006). As the existing components of treatment programmes are reportedly effective for White groups it would be beneficial to benchmark effectiveness of treatment components against that of BME groups and consider the utilisation behaviours for these components for example, attendance, use of resources etc.

In consideration of these service utilisation behaviours; self-selection, defined as the differences between those who are referred and subsequent engagement, may prove a critical factor in the review of the impact on effectiveness of interventions (DeLeon. 1998; Grady, 1983). Comparative examination of the influence of self/family referral and those from statutory organisations has produced contradictory findings (Atkinson et al. 2003; Brizer et al. 1991; Wild et al. 2006). This raises questions regarding the role/influence of the family in the effectiveness of intervention (Copello et al. 2005). The role of the family has been highlighted as a significant social construct in BME groups, with varying influence dependent upon acculturation (Landerine & Klonoff. 2004). In order to effectively tailor programmes for BME groups, closer attention is required to address social constructs in ethnic groups.

Finally, due to the nature of alcohol addiction and susceptibility to relapse, relapse prevention is considered a fundamental component in the construction of alcohol treatment. Questions arise when examining optimal treatment outcomes and the influence of ethnicity difference in service utilisation behaviour and maintenance of alcohol abstinence. To aid understanding of relapse, a review of a simple model of the core components of relapse should be considered (Marlatt & Gordon, 1993 in Shadel & Mermelstein. 1995). In short, the model suggests that abstainers and those who relapse will be subject to high-risk situations, whereby a balance of high self-efficacy and negative outcome expectancies from performing a behaviour, will result in either maintained abstinence or relapse.

When considering how ethnicity may influence relapse, ethnicity has been implicated as a mediator of self-efficacy (Hackett et al. 1992) and differences

in ethnicity and self-efficacy and subsequent abstinence or relapse to other misused substances have been observed (Warren et al. 2007; Yih-Ing. 2007).

It remains unclear if there are ethnic differences in initial and maintained alcohol abstinence following varying treatment settings, content and service utilisation behaviours. In an examination of the effectiveness of alcohol interventions for BME groups, it will be essential to consider the differences in short and long-term effectiveness of these programmes, as benchmarked against comparative Caucasian groups.

Objective

Is there evidence that the effectiveness of behavioural interventions to reduce alcohol consumption is variable across adult BME groups comparative to White Caucasians residing in high-income economies?

Method

Criteria for considering studies for the review

Studies including a population of self-identified BME groups residing in high income economies were reviewed. Self-identified ethnicity is reported in recognition of the importance of perceived belonging to a specific ethnic population (Ward & Wiscousin. 2007). A focus on high-income economies was considered important given the previously outlined influence of acculturation on health related behaviours and the increase in BME groups requiring alcohol behaviour interventions in Western society. The review considered the effectiveness of behavioural interventions for reducing alcohol consumption in longitudinal studies examining one or more BME groups in comparison to White Caucasians.

Inclusion Criteria

1. The main aim of included studies should be to examine ethnicity/race differences in alcohol consumption following engagement with an alcohol treatment programme.
2. Studies focussing on publicly available alcohol misuse behaviour modification programmes available in high income economies.
3. Comparative studies including a comparative White Caucasian group at baseline.
4. Longitudinal studies.
5. Outcome measure, alcohol consumption.
6. Self-identified ethnicity.

Exclusion Criteria

1. Discursive Articles
2. Psychiatric Population.
3. Prison Population.
4. Single Sex Studies.
5. Adolescent Populations (<18 years of age).

<u>Exclusion Criteria Rationale</u>

As this review is being conducted in response to a gap in knowledge about the effectiveness of behavioural interventions and subsequent alcohol use in BME groups, a number of specialist population studies in this area have been excluded from this review. Gender differences in motivation for engaging with alcohol treatment (Fiorentine et al. 1999) and coping styles (Paparigopolous et al. 2007) led to the decision to exclude single sex studies from this review. As psychiatric populations require intensive care and case management in comparison to populations without classified mental disorders (Kavanagh & Muesser. 2007), studies examining exclusively psychiatric populations (in addition to addiction) were also excluded. Prison populations have also been excluded as engagement in treatment programmes and variance in choice and acceptance of treatment resulting

from self-selection, may bias findings (DeLeon. 1998). Additionally, strong differences in psychosocial profiles of referrals from the criminal justice systems comparable to other populations receiving treatment (Farabee et al. 1993) may have unduly influenced the results of the review. Finally, adolescent populations were also excluded, as age is a significant predictor of engagement with therapists in substance misuse treatment (Garner et al. 2008). Given the importance of the alliance with therapists and service utilisation (Fiorentine & Hillhouse. 2000) this may have confounded findings regarding the outcomes of intervention. Exclusion criteria 2-5 were therefore employed to avoid any bias from specific population groups as outlined.

Search Strategy

Electronic Search

The literature search was conducted using AMED, Medline, Embase, PsychInfo, CINAHL, and electronic databases. Each database was searched for MeSH/Subject Headings and Keywords with terms: Rac$, Ethni$, Immigra$, Cultur$ *AND* Alcoho$ *AND* Behaviour Modification Program$, intervention. It was decided to combine two search terms for alcohol and intervention following a review of substance misuse intervention Cochrane Reviews, which had used this method to enhance the sensitivity of results (Jefferey et al. 2000). All databases were searched from year of inception to 2008. Appendix 1. Illustrates the full electronic search strategy. A secondary electronic search was conducted including authors of studies in the primary review.

<u>Grey Literature</u>

The National Research Register, SIGLE, Alcohol Concern – National Database, The Institute of Alcohol Studies, The US Department of Education – Centre for Research on Drug and Alcohol Abuse, The National Institute of Alcohol Abuse and Alcoholism, The Australian Centre for Addiction Research websites were searched using the same search criteria as listed above. The full search strategy is illustrated in Appendix 2. Websites and databases were searched from the year of inception to March 2008.

Hand Searches

Hand searches were conducted using alcohol specialist journals; Alcoholism: Clinical and Experimental Research, Alcoholism Treatment Quarterly, Journal of Studies on Alcohol and Drugs (formally Journal of Studies on Alcohol) and the journal, which had published studies included in the review. This search included published journals from September 07 – March 08 to allow for any delay in information available through electronic search engines. Reviews and discursive articles, which were extracted from the review in the final exclusion wave, and included studies were searched for appropriate references.

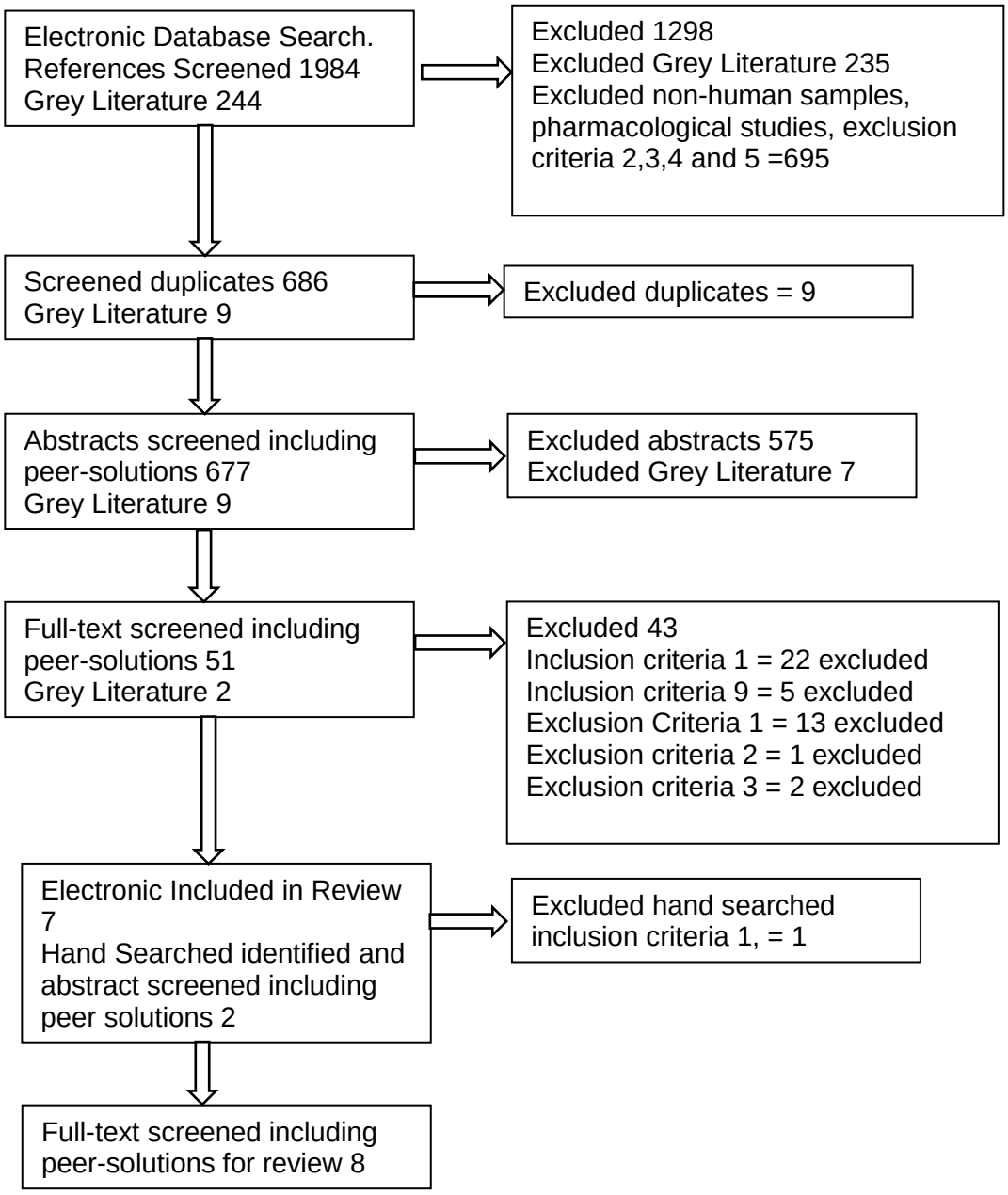
Methods of review

All abstracts were reviewed by two authors to ensure that studies selected adhered to the inclusion/exclusion criteria outlined on the data extraction form (Appendix 3). The second reviewer was not involved in the study topic area and therefore was included to minimise selection bias of included studies. Any disputes relating to inclusion in the review were resolved by a third reviewer from the DHealth Supervision team at UWE. As the review considered generic ethic group differences and not specific group differences, e.g. African American, Mexican, and studies included various treatments, meta-analysis was not considered appropriate. Due to the variance of BME groups examined in each study it was also not possible to compare group ethnicity across studies.

Exclusion Process

The rationale for exclusions are outlined in figure a.

Figure. a. Flow Chart Illustrating each Stage of the Exclusion Process



Most studies were excluded following a review of abstracts through exclusion criteria 1, (discursive articles), and inclusion criteria 1, (the main aim of the study being to examine ethnicity/race differences in alcohol consumption following use of alcohol treatment programmes). On review of full text studies, most studies were excluded through inclusion criteria 1, as the studies were examining pre-determinants of alcohol use and not treatment. Following examination of the Cochrane Library and searched databases, to the authors knowledge there have been no previous systematic reviews

examining ethnic differences in alcohol consumption following alcohol behaviour modification programmes. Similar systematic reviews which have been conducted examine ethnic differences in the outcomes of smoking cessation programmes (Lawrence et al. 2003) and ethnic differences of alcohol treatment in adolescent population (Strada et al. 2006). Available grey literature was dominated by studies examining alcohol use as a sequelae of ethnicity rather than examination of difference in intervention effectiveness. Identified grey literature abstracts, which fulfilled inclusion criteria, were not included in the review as the authors of the papers were un-contactable and therefore papers could not be obtained for review.

A total of eight studies were included in this review; summaries of each are presented in order of publication date in Table a.

Table a Summaries of Reviewed Articles

Journal	***Aim***	***Design*** (P-Prospective or R- Medical Records C- Comparative, M – Repeated Measures, CS - Cross Sectional) Sample Ethnicity	***Intervention Centre*** (Including TSF = 12 Step Facilitation, CBT = Cognitive Behavioural Therapy, MET = Motivational Enhancement Therapy)	***Outcome Measures***	***Analysis***	***Findings***
Comparison of Treatment Utilisation and outcome for Hispanic and Non-Hispanic Whites. Arroyo, Westerberg & Tonigan. (1998)	To examine differences in the use of formal alcohol treatment by Hispanics and Non-Hispanic Whites and compare this influence on post treatment outcomes expected that TSF would be less successful for Hispanic as attendance lower is this group.	P, R, C – 46 Hispanic 62 Non-Hispanic Whites	University of New Mexico's centre of Alcoholism. Substance Abuse and Addictions – A mixture of detoxification, outpatient group therapy, intensive outpatient counselling.	Proportion of days abstinent Drinks/drinking day	MANOVA Multiple Regression Pearsons Correlation Coefficient	Although outcome drinking intensity and frequency was similar for Hispanic and NHW, Hispanics had lower levels of attendance. Hispanics were more likely to report living with others, therefore may draw on outside social support systems.

Participation and Outcome of a Residential Treatment and Work Therapy Program for Addictive Disorders: The Effects of Race. Rossenheck & Sebyl (1998).	To examine the differences in participation and outcome of a residential work and therapy program, between black and white veterans with an addictive disorder.	470 African American 492 White Veterans	Connecticut Healthcare – Compensated work Therapy/Transitional Residence Program Residential treated – in the community shared responsibility in maintained residence, therapeutic work for pay environment. Substance abuse outpatient treatment. With links to AA.	DSM-II-R criteria- Addiction Severity Index	Chi-Squared t-test ANCOVA	Black participants showed more improvement in alcohol problems than whites and were more likely to show sobriety at 3 months when in treatment groups with high proportions of Black veterans.
Alcoholics Anonymous and Church involvement as Predictors of Sobriety Among Three Ethnic Treatment Populations. Roland & Kaskutas	To investigate the impact of spirituality, religiousness and involvement in Alcoholics Anonymous on sobriety in African Americans, Caucasians and Hispanics.	P R M C 538 Caucasians 253 African Americans 60 Hispanics	California County Alcohol Research Group – 10 various interventions	30 day sobriety	ANOVA	Caucasians and Hispanics with high AA attendance were more likely to report 30 day sobriety. African Americans were more likely to report 30 day sobriety with high AA attendance and additional church attendance

(2002)						
The Influence of Hispanic Ethnicity on Long-Term Outcome in Three Alcohol-Treatment Modalities. Arroyo, Miller & Tonigan. (2003)	To investigate the differences in treatment outcome of three different treatments on Non-Hispanic Whites and Hispanics considering the influence of acculturation.	P R C 105 Non-Hispanic Whites 100 Hispanics Between-subjects	Albuquerque – New Mexico – Project MATCH Research Group All 12 week programmes TSF *or* CBT *or* MET	Alcohol use AA Attendance and Involvement	MANOVA MANCOVA Chi Squared Pearsons Correlation Coefficents	Level of acculturation did not have an influence on treatment outcomes. Hispanic clients responded similarly to all treatment conditions. Non-Hispanics responded better to 12-step facilitation in comparison to Hispanics. Hispanics reported greater intensity of drinking. Attendance was lower in Hispanics
Racially Related Health Disparities and Alcoholism Treatment and Outcomes.	To examine the difference in outcome of outpatient alcohol treatment program on Blacks and Whites.	P R C 38 Blacks 136 Whites	Midwestern Addiction Treatment Centre – Michigan. All programmes abstinence based. Combined individual, group	Alcohol quantity and frequency of consumption over past 28 days 17-item scale	t-test Chi-Squared	Although Blacks received less treatment the outcomes were no different to those of whites. Black users also reported more social support for

Brower & Carey (2003)			and family therapy, tailored to need. Included TSF, MET and relapse prevention and interaction group therapy	substance dependence		sobriety than the comparative white group.
An Examination of Potential Sex and Race Effects in a Study of Continuing Care for Alcohol and Cocaine Dependant Patients. McKay, Lynch, Pettinati & Shepard (2003)	To examine the effects of race and gender treatment outcome and continuation of care, and determine the impact of key mediator variables.	73% Black 27% White	Treatment Research Centre Pennsylvania One of three 12 week programmes. TSF (standard – planning leisure time – people, places and things), individualised relapse prevention, (one individual and one group session per week with weekly homework) or brief telephone monitoring counselling (one telephone call and one session per week)	Addiction Severity Index Urine and Blood samples	Mixed-effect Regression	Blacks had poorer retention in continuing care than whites, Alcohol reduction deteriorated more rapidly after 6 months in blacks than in whites. Whites recovery seemed to be influenced by Self-efficacy and self-help attendance, this was not the case for the Black group.

Project Match Treatment Participation and Outcome by Self-Reporter Ethnicity. Tonigan. (2003)	To contrast Black, Hispanic and White alcohol treatment engagement and outcome to identify health disparities related to client race.	P C R M 1380 White 168 Black 141 Hispanic	Albuquerque site – New Mexico – Project MATCH Research Group One of three 12 week interventions included TSF *or* CBT *or* MET	Percentage days abstinence Drinks per day Treatment Compliance Self-reported Satisfaction	Chis-Squared ANOVA MANCOVA	Pre-treatment characteristics such as readiness to change and self-efficacy indicated better outcomes for Whites than Hispanic and Black groups. However outcomes at 12 months did not reflect these differences, suggesting that ethnic minority groups may be utilising other strategies or drawing on additional social resource.
Response of Native American clients to three treatment methods for alcohol dependence.	To investigate if Native Americans would have a differential response to three psychosocial alcohol dependence	25 Native Americans (comparative sample – white)	Albuquerque site – New Mexico MET (recognised as more client centred than other therapies) or TSF or	Form 90 Interview (Miller, 1996) to quantify frequency and intensity of drinking.	ANCOVA	Native Americans had a more positive response to MET treatment.

Villanueva, Tonigan & Miller. (2007)	treatments.		CBT			

Methodological quality of the included studies

The methodological quality of included studies was reviewed applying principles of the Jadad Scoring System (Jadad et al. 1996). As the included studies were not randomised controlled trials a scoring system was created for this review. The criteria considered design, sampling and study susceptibility to; selection, performance, reporting and attrition bias (Appendix 4).

Scores for each study are displayed in Appendix 4. Scores indicate methodological quality was: *high* in the following studies; Arroyo et al (2003), Brower and Carey (2003) and Villaneuva et al (2007), *moderate* in the studies conducted by; Arroyo et al (1998), Tonigan (2003), Rosenheck & Seibyl (1998) and McKay et al (2003) and *poor* quality in one study conducted by Roland & Kaskutas (2002). Tables used in the remainder of this review will present studies in order of quality, presented with the highest first.

Four studies included Hispanics, five studies included Black populations, only one of which identified African American as a distinct Black population (Roland & Kaskutas. 2002) and one study examined Native Americans. Selection bias resulting from the absence in reporting of sub-populations (i.e. Puerto Rican, Mexican), restricts the value of the results as variations in prevalence and sociodemographics of the sub-populations are not identified. All studies were exploring ethnicity as a pre-requisite of differential treatment outcome, however the study by Arroyo et al (2003) was the only study to examine mediating influence of acculturation. This study considered Mexican acculturation only. Although all attempted to control for sub-sample variance by recording baseline sociodemographics, the absence of experimental design, as acknowledged by Rossenheck & Seibyl (1998) allows for unidentified variance within and between populations. This can be seen in the sociodemographic information available, which with the exception of one study (Rossenheck & Seibyl. 1998) illustrates consistently greater years of education, income and lower employment problems in the comparative White Caucasian sample, regardless of ethnic comparator. This may implicate

socioeconomic status as the differential factor rather than ethnicity per se, however, no study had a control group to enable exploration of this. Table b illustrates sociodemographics for BME comparative to Caucasian White samples.

Table b. Sociodemographics of BME alcohol treatment users comparative to White Caucasians

	Ethnicity	***Males***	***Full-time Employed***	***Married/ Cohabiting***	***Education years***	***Age years***	***Living Alone***
Arroyo *et al* (2003)	**Hispanic**	Greater	Less	Greater	Less	Younger	X
Brower *et al* (2003)	**Black**	Equivalent	X	Less	Less	Equivalent	X
Villanueva *et al* (2007)	**Native American**	Greater	X	Less	Equivalent	Older	X
Tonigan (2003)	**Black** **Hispanic**	X X	X	Less Less	Equivalent Less	Equivalent Younger	X X
Arroyo *et al* (1998)	**Hispanic**	Greater	Equivalent	Equivalent	Less	Equivalent	Less
Rosenheck & Seibyl (1998)	**Black**	Less	Greater	X	X	Younger	X
McKay *et al* (2003)	**Black**	X	X	X	Less	Younger	X
Roland & Kaskutas (2002)	**Black** **Hispanic**	Greater Greater	Less Equivalent	Less Greater	X X	Equivalent Equivalent	X X

The BME samples were also more likely to be younger, male and less likely to be married cohabiting than the comparative white sample. Arroyo et al (1998) was the only study to include a minimum literacy requirement, this may have been critical as socio-economic status varied across samples, jeopardising the precision of reports. Interestingly, given the nature of the study, Arroyo et al (1998) was also the only study to implement a maximum alcohol breath mg% limit for interview; however in the absence of data about the proportion of interviews this exempted, the impact of this exclusion process cannot be evaluated. Given the identified confound of socioeconomic factors it is surprising that Arroyo et al (2003) was the only

study to consider sociodemographic factors as medicating variables in the final analysis (although this was not a significant finding).

All studies with the exception of Brower & Carey (2003) recruited samples from multiple treatment sites. Although multi-site sampling may increase patient heterogeneity, this was not explicitly reported in any of the studies and this cannot be reviewed. The ethnic congruence of participants and treatment groups at each site was considered by only one study (Rossenheck & Seibyl. 1997). Arroyo et al (1996) selected their recruitment site based upon known multi-ethnicity attendance. This may have introduced bias into the study prior to recruitment. Although the sample size was comparable across white and Hispanic groups, the study did not include any analysis of whether the sample was representative of the overall clinic population. Despite being the only study reviewed judged to be of poor methodological quality, Roland & Kaskutas (2002) were the only authors to conduct validity tests on their chosen site to infer generalisability across the state as a whole. It is also noteworthy that samples were not recruited at one time period in any of the studies. The timing of recruitment may produce different results confounded by any number of variables. The study by Villanueva, at al (2007) was underpowered due to the small sample size and therefore the analysis was susceptible to type II errors. With the exception of Villanueva et al (2007), no studies randomly assigned participants to treatment. This bias may have significant impact on the results, especially as reported by Arroyo et al (1996), Hispanics are the heaviest users of outpatient treatment services. This is a significant factor in interpreting the results as the allocation to each treatment option was reported on the basis of self-determined need rather than clinical need. To clarify the variance in treatment settings and stage of treatment delivered, Table c. summarises the characteristics of the studies included in review.

Table c. Stage of Treatment Studied

	Treatment Setting	***Stage in Studied Treatment***	***Stage in Cumulative Treatment***	***Treatment Site and BME Population***
Arroyo *et al* (2003)	Outpatient	Admittance	X	New Mexico X
Brower *et al* (2003)	Outpatient	Admittance	X	Michigan X
Villanueva *et al* (2007)	Outpatient & Aftercare	Admittance	X	New Mexico X
Tonigan (2003)	Outpatient	Admittance	X	New Mexico X
Arroyo *et al* (1998)	Outpatient	Admittance	X	New Mexico X
Rosenheck & Seibyl (1998)	Residential Rehabilitation	Admittance	15 Weeks	Connecticut X
McKay *et al* (2003)	Outpatient Aftercare	Records	X	Pennsylvania X
Roland & Kaskutas (2002)	Outpatient & Residential	Admittance	Admittance	California X

Most samples were outpatients, with only two studies examining aftercare and an additional study examining community rehabilitation following a 15-week treatment programme (Rosenheck & Seibyl. 1998). The participants in this study, had completed a 15-week programme. The authors acknowledge that some participants may have dropped out during this time, biasing the sample, limiting the generalizability of the findings only to those who have completed a course of treatment. This limitation is also applicable to McKay et al's (2002) study of aftercare. The characteristic data for the sample was collected prior to initial treatment, therefore baseline data is incomplete and imposes potential bias on inferring causal relationships of ethnicity and service use outcome.

All studies measured self-reported alcohol use. Efforts were made to supplement the reliability of the self-reports in the McKay et al (2003) and Tonigan (2003) studies. These used biochemical markers to reduce the reliance on self-reported drinking behaviour with its potential inherent biases. No study included a bogus pipeline (techniques applied to reduce the social desirability of responses), to enhance the reliability of self-reported alcohol use, however Tonigan (2003) used clinician reports to validate the self-report data. It is unclear why other studies did not use this method as all research centres were clinic based.

In analysis of covariates, most studies used multiple ANOVA or ANCOVA to examine ethnicity. ANOVA allows interaction effects to be determined. This is an appropriate analysis to be used to examine differences in outcome consumption and utilisation, and the effects of multiple independent variables, including ethnic groups. ANCOVA allowed the effect of identified covariates (e.g. sociodemographic factors) to be controlled and therefore was an appropriate analysis to use for the research question. T-tests were used in Brower et al's (2003) study, given the small sample of Black participants study. Regression analysis was used to examine multiple factor effects on repeated alcohol use by McKay et al (2002). Use of these analyses is dependent upon homoscedasticity (Hamsici et al. 2007), however no study reported confirmation of normality.

As levels of previous service utilisation may impact on differential treatment outcomes, Previous Treatment Utilisation (PTU) was considered as a potential bias. Table d. summarises PTU across the reviewed studies.

Table d. Previous Treatment Utilisation & Outcome Effectiveness

	Measure	**Ethnicity**	**Previous Attendance Vs White Caucasians**	**Reduction in Drinks Per Drinking Day (DDD) Vs White Caucasians**	**Reduction Proportion of Days Abstinent (PDA) Vs White Caucasians**
Arroyo *et al* (2003)	AA Attendance AA Involvement	Hispanic Hispanic	Less Less	Less Effective	Equally Effective
Brower *et al* (2003)	>2 Previous Session	Black	More	X	X
Villanueva *et al* (2007)	AA Prior Attendance	Native American	Less	X	X
Tonigan (2003)	% Days in attendance	Black Hispanic	Less Less	Equally effective Equally effective	More Effective Equally Effective
Arroyo *et al* (1998)	X	Hispanic	X	X	X
Rosenheck & Seibyl (1998)	X (All completed at 15 weeks)	Black	X	X	X
McKay *et al* (2003)	X	Black	X	X	X
Roland & Kaskutas (2002)	9 item AAI scale	Black Hispanic	Equivalent Equivalent	X X	Equally Effective More Effective

Table d demonstrates that BME groups had received less previous treatment and had been less involved in treatment activities across all studies, with the exception of Drinks Per Dinking Day (DDD) for Hispanics in one study, less or equivalent attendance comparable with white groups was not found to have a negative impact on treatment outcome. A third of the reviewed studies, All of which were classified as ‘moderate’ in quality, did not examine previous treatment utilisation. McKay et al (2002) and Rosenheck & Seibyl (1998) were exploring aftercare and therefore it would have been appropriate

to have included measures of PTU. However, Rosenheck & Seibyl were the only authors to explicitly report this information. As outlined, where PTU was reported, different outcomes across ethnicity were demonstrated. This may be explained by the variation in the 'phase' of treatments reviewed across studies or the different timescales since previous treatment. Again studies were consistent in their use of terminology. Using the terms, 'attendance' and 'involvement' interchangeably to describe the outputs of the Alcoholics Anonymous Involvement 5-item scale which included questions about, reading, sponsorship and spiritual awakening. It is surprising that all studies did not consider differentiation between frequency and intensity of drinking behaviour, however, as e.g. Tonigan (2003) used the Form-90 (which incorporates the intensity measure) for assessing alcohol status but did not report application of the measure, it would appear to reflect selective reporting rather than overlooking of the importance of this variable.

The methodological quality, identified in the initial scoring was supported by this narrative exploration of the fine detail of the included studies. Therefore the following results section will consider study findings in order of quality.

Results

All studies used prospective, repeated measures, longitudinal designs to allow cause-effect relationships to be inferred. All were published between 1998 and 2007. All studies examined differences in alcohol consumption following engagement with an alcohol behaviour modification programme across one or more ethnic/racial groups comparative to white Caucasians. All studies reported the actual treatment received, enabling an exploration of the effect of service utilisation on any differences in outcome alcohol consumption across ethnic/racial group. All studies were conducted in the USA, therefore findings can only be generalised to this population. Three of the included studies were conducted in the same research centre in Albuquerque, New Mexico, and by the same research group, Project MATCH (Arroyo et al 2003; Tonigan, 2003; Villanueva et al 2007). Two studies were published 2002-03 raising the possibility of multiple reporting of data from one set of participants. However, the demographic characteristics of the

sample differed across studies, thus both studies were included in the review. Selective outcome reporting negated the possibility of comparing the effectiveness of treatment in Native Americans to Whites.

Treatment settings

The included studies delivered a broad range of interventions as displayed in Table e. Studies are presented in sections for different treatments in relation to their methodological quality as reported above. The three 'high quality' studies provided mixed evidence of the effectiveness of programmes in BME compared to white groups. The remaining studies provided no evidence of equal or greater effectiveness of behavioural interventions for BME comparative to white groups.

Due to the variance in the types of treatments reviewed, the treatment setting and treatment content of each study was considered in relation to their relative effectiveness for BME groups and white groups. Most (N=8) studies examined outpatient interventions, two of which included aftercare. One study (Rosenheck & Seibyl. 1998) examined residential rehabilitation, which incorporated community rehabilitation approaches including 'work for pay' programmes and life skills e.g. paying bills for rent and food. Relapse prevention was included in two studies (Brower et al. 2003; McKay et al. 2003), detoxification and group counselling were also included in one study (Arroyo et al. 1998). All studies provided very limited detail about the content of delivered interventions. Cognitive Behavioural Therapy (CBT), Motivational Enhancement Therapy (MET) and Twelve Step Facilitation (TSF) were examined and compared in three studies, finally TSF and intensive relapse prevention by one. This was to allow for identification of differences in utilisation, and control for self-selection across ethnic groups as TSF actively encourages participation.

Table e. Treatment Setting and Effectiveness for BME comparative to White Groups

Treatment	***Study***	***Treatment Setting***	***Ethnicity***	***Reduction DD V White***	***Reduction PDA v White***
Twelve Step Facilitation (TSF)	Arroyo et al (2003)	***Outpatient***	Hispanic	Significantly less effective	Equally Effective
	Brower et al (2003)	***Outpatient***	Black	X	X
	Villaneuva et al (2007)	***Mixed outpatient and aftercare***	Native Americans	X	X
	Tonigan (2003)	***Outpatient***	Black	Equally effective (TNAS)	Significantly more effective
			Hispanic	Equally effective (TNAS)	Equally effective (TNAS)
		Aftercare	Black	Equally effective (TNAS)	Equally effective (TNAS)
			Hispanic	Equally effective (TNAS)	Equally effective (TNAS)
	McKay et al (2003)	***Outpatient***	Black	Equally effective (TNAS)	Equally effective (TNAS)
Motivational Enhancement Therapy (MET)	Brower et al (2003)	***Outpatient***	Black	X	X
			Native	X	X
	Villaneuva et al (2007)	***Mixed outpatient and aftercare***	American Black	Equally effective (STNAS)	Significantly more effective
	Tonigan (2003)	***Outpatient***	Hispanic	Equally effective (TNAS)	Equally effective (TNAS)

		and aftercare	Black Hispanic Black	Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS)	Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS)
Cognitive Behavioural Therapy (CBT)	Villaneuva et al (2007) Tonigan (2003)	***Mixed outpatient and aftercare*** ***Outpatient*** ***and aftercare***	Native American Black Hispanic Black Hispanic	X Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS)	X Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS) Equally effective (TNAS)
MET and CBT combined	Arroyo et al (2003)	***Outpatient***	Hispanic	Equally effective	Equally effective
Relapse Prevention	Brower et al (2003) McKay et al (2003)	***Outpatient*** ***Outpatient aftercare***	Black Black	X Equally effective (TNAS)	X Equally effective (TNAS)
Telephone Counselling	McKay et al (2003)	***Outpatient***	Black	Equally effective (TNAS)	Equally effective (TNAS)
Work for pay	Rosenheck & Seibyl	***Residential treatment***	Black	Significantly more effective	X

programme and AA	(1998)	***in community setting***		(measure drinking problems)	
Detox, group and intensive counselling	Arroyo et al (1998)	***Outpatient***	Hispanic	Equally effective	Equally effective
No detail	Roland & Kaskutas (2002)	***Mixed Outpatient and residential Detox***	Hispanic Black	X X	More effective (SNAS) Equally effective (SNAS)

TNAS – Treatment Data Not Analysed Separately for each treatment condition
SNAS – Setting Data Not Analysed Separately for each setting for delivery of treatment

Outpatient settings

Outpatient treatment settings, (including a variety of community based programmes), appeared significantly less effective for Hispanic participants in relation to the number of drinks consumed per day compared to White participants in the Arroyo et al. 2003 study. However, this was not reflected in Tonigan's (2003) paper which demonstrated equal effectiveness for Hispanic and white participants. Interestingly, these two studies were conducted at the same research site. However, Tonigan (2003) did not report any detail about the type or timing of intervention studied, so the conflicting findings may be the result of variations in content. This possibility is reviewed in further detail in the next sections.

Most studies reported an equivalent level of effectiveness of outpatient treatment between population groups in relation to the number of days of abstinence from alcohol following treatment. Tonigan (2003) found a significantly greater number of days of abstinence in the Black group compared to White participants. This finding was echoed in Villaneuva et al's (2007) study for Native Americans, however, analysis was combined for outpatient and aftercare, limiting further analysis. Roland & Kaskutas (2002) also combined the results of the outpatient and residential detoxification interventions and reported these combined results of 'therapy' significantly more effective for Hispanics when assessed in relation to the proportion of days abstinent following treatment. Given the mix of treatments analysed it is not possible to isolate the effectiveness of outpatient treatment only. However, the available evidence is suggestive of a lower effectiveness of outpatient treatment in Hispanics compared to white service users and an equal effectiveness of outpatient treatment for Black and Native Americans compared to whites.

Aftercare

Studies reported mixed results in the effectiveness of aftercare for white and BME groups. The difference in results appears to be attributable in large part to the difference in the content and availability of treatment programmes. McKay et al (1998) and Tonigan (2003) reported no significant differences in

the effectiveness of aftercare in the form of telephone counselling and Alcoholics Anonymous group counselling respectively for any sub-population group. However, significantly greater effectiveness was reported for the black participants compared to whites as a result of the residential rehabilitation 'work for pay' aftercare programme (Rossenheck & Seibyl. 1998). Although the study outcomes were for the aftercare programme, it is noteworthy that studies reported sociodemographic characteristics of samples prior to treatment. Attrition may vary across sociodemographic groups and therefore the characteristics of the sample who transition to aftercare may differ from those who completed measures at baseline. The absence of data collected prior to aftercare prohibited sufficient benchmarking of samples and restricted inference of causality. However, the findings suggest that residential aftercare is more effective than telephone or community group programme settings for black groups comparative to whites.

Treatment Type; TSF, MET CBT and Detoxification and Intensive Counselling.

Most studies combined a number of techniques and intervention components, but did not analyse the impact of these separately. Those studies which failed to analyse the separate components reported no significant differences in treatment effectiveness in the reduction of alcohol consumption across BME groups. One study did, however, analyse data relating to the various intervention components as follows:

Twelve Step Facilitation (TSF)

In the only study to analyse data for each intervention separately Arroyo et al (2003), identified TSF as being significantly less effective for Hispanics comparative to whites when assessed through the reduction of drinks per drinking day. TSF is reported as an intervention which actively encourages participation, therefore adherence to treatment may not be reflective of therapeutic gain, but rather an effective adherence intervention. This could however not be inferred from this study as levels of treatment involvement were not reported. It is however surprising that Arroyo et al (1998) and

Tonigan (2003) reported the combined range of the aforementioned interventions, rather the impact of studying each separately.

Motivational Enhancement Therapy & Cognitive Behavioural Therapy

No study examined MET and CBT separately, restricting an evaluation of each component. Combined MET and CBT was found to have equal effectiveness in Hispanics and White groups (Brower et al 2003; Villaneuva et al. 2007; Tonigan. 2003).

Detoxification and Intensive Counselling

A combination of detoxification and intensive counselling was reviewed in one study. This was found to be equally effective for Hispanics and Whites (Arroyo et al. 1998).

In addition to an examination of treatment components, treatment effectiveness was also considered at different follow up time points. The effectiveness at proximal (1-5 months) and distal (6-12 months) follow up point are displayed in Table f.

Table f. BME and White Group Comparative Alcohol Consumption Post Treatment. Effectiveness over time

	Ethnicity	***Proximal Follow up*** ***1 – 5 months***		***Distal Follow up*** ***6 – 12 months***	
		PDA	**DDD**	**PDA**	**DDD**
Arroyo et al (2003)	**Hispanic**	3 months Less effective	3 months Less effective	6 months Less Effective 12 months More effective	6 months Less Effective 12 months More effective
Brower & Carey (2003)	**Black**	1 month More	1 month More	X	X

		effective	effective		
Villaneuva et al (2007)	**Native American**	X	X	X	X
Arroyo et al (1998)	**Hispanic**	2 months Equally effective 4 months equally effective	2 months Equally effective 4 months equally effective	6 months Equally effective	6 months Equally effective
Tonigan (2003)	**Black** **Hispanic**	1-5 months More effective Equally effective	X	6-12 months More effective Equally effective	X
Rosenheck and Seibyl (1998)	**Black**	3 months (alcohol problem score) More effective	X	X	X
McKay et al (2003)	**Black**	3 months Equally effective	X	6 months Equally effective 12 months Equally effective	X
Roland & Kaskutas (2002)	**Black**	1 month Equally as effective Less	X	X	X

	Hispanic	effective			

PDA – Proportion/Percentage of Days Abstinent
DDD – Drinks per Drinking Day
X – no detail

Proximal Follow up (1-5 months post treatment)

There is good evidence to indicate that at proximal follow up there was greater effectiveness of treatment for black comparative to white groups. Only one study by Arroyo et al (1998) indicated equal effectiveness at proximal follow up, however, the inclusion of an aftercare intervention may have biased the findings as the follow up time from the initial treatment may have in fact been reflective of a distal follow up. Mixed findings were illustrated for the proximal effectiveness of treatment in Hispanics compared to Whites. There is however good evidence that treatments were less effective for Hispanics comparative to Whites at proximal follow up.

Distal follow up (6-12 months post treatment)

Few studies reported longer term follow up outcomes. There is good evidence (Arroyo et al. 2003) for treatment effectiveness, (recorded at 12 months) to be greater in Hispanics comparative to White groups. These findings were not however echoed in the Tonigan (2003) study which used 6–12 months follow up data, and demonstrated more favourable outcomes for black participants compared with white Caucasians.

The extent of service utilisation; Attendance and participation

As the degree of service utilisation has been identified as a possible confound in the reporting of the effectiveness of treatments, levels of participation in treatment by BME and White groups and the effectiveness of treatment outcomes are reviewed in Table g. There is good evidence (Brower et al. 20003) that Black participants had engaged in fewer hours of outpatient therapeutic interventions including MET CBT and relapse prevention than other groups. However, Black groups were reported to have attended more hours of work therapy in community settings. Evidence from a weaker study (Roland & Kaskutas. 2002) indicates that black participants

had higher levels of engagement with the information in treatment sessions; however the scale for measurement of this was not validated. Disappointingly, there is no evidence provided in the stronger studies relating to treatment utilisation and effectiveness. McKay et al (2002) highlighted black participants as consuming more drinks per day following an equivalent level of engagement in relapse prevention and aftercare treatments in Black compared with White participants. Interestingly this study also indicated that higher levels of utilisation were related to enhanced self-efficacy for white service users only (McKay et al 2002). There was no difference observed in engagement of Hispanics who also engaged with formal therapy, however, this had less of an impact on treatment effectiveness comparative to Whites. Lower levels of attendance and less effective outcomes were observed in the informal therapy format, suggesting that self-selection of treatments dependent on the commitment required may have been a factor. This may also imply that a measurement relying on attendance is a measure of adherence rather than engagement with the intervention.

Table g. Service Utilisation Behaviours and Effectiveness of Treatment

	Measure	***Ethnicity***	***Treatment Setting***	***Therapies Measured***	***Service Utilisation Behaviours Vs White Caucasian***	***Service Utilisation Impact on effectiveness Vs White Caucasian***
Arroyo *et al* (2003)	*Form 90* *(Includes % days therapy)*	**Hispanic**	Outpatient	X	X	X
Brower *et al* (2003)	*Duration (Calender Days)* *Number of hours across all treatment*	**Black**	Outpatient	X	Less Less	X X
Villanueva *et al* (2007)	*Form 90* *(Includes % days therapy)* *Subjective agreement with therapist – agreed goal*	**Native American**	Mixed Outpatient and Aftercare	X	X	X
Arroyo *et al* (1998)	*Form 90* *(Includes % days*	**Hispanic**	Outpatient	Formal therapy AA meetings	Equivalent Less	Less Less

	therapy)					
Tonigan (2003)	*Form 90* *(Includes % days therapy)* *Subjective agreement with therapist – agreed goal*	**Black** **Hispanic** **Black** **Hispanic**	Outpatient and Aftercare	X X X X	Less Less Less Less	X X X X
Rosenheck & Seibyl (1998)	*Average number attended per month* *Hours worked per week*	**Black**	Residential community rehabilitation	X	Equivalent More	X X
McKay *et al* (2003)	*Sessions Participated*	**Black**	Outpatient Aftercare	X	Equivalent	Greater Heavy Drinking
Roland & Kaskutas (2002)	*5 item Alcoholics Anonymous Engagement*	**Black** **Hispanic**	Mixed Outpatient and Residential	X	More More	Higher involvement/High abstinence Higher involvement/High abstinence

Discussion

Effective treatment is essential to reduce current levels of alcohol related harm and gain an understanding of the factors contributing to the variance in population sub-groups is also required to address the higher levels of morbidity and mortality in BME groups. The aim of this review was to establish if there is evidence for any difference in the effectiveness of alcohol related interventions for BME groups compared with white groups, with a view to informing interventions better tailored to the needs of participants.

This review included eight studies, all conducted in the USA, and involving, Hispanic, Black and Native American comparative to White Caucasian participants. The examination of the evidence for any differences in treatment effectiveness for different population subgroups was inconclusive. This may be accounted for by the differences in treatments offered across studies. To explore this further, the setting of treatment, content of treatment, duration of follow up periods and levels of engagement with treatment were considered.

The available evidence indicates that outpatient treatment achieved less favoured outcomes for Hispanics compared to white participants. There is also good quality evidence that TSF is significantly less effective for Hispanics compared with White service users. Disappointingly, the reason for this difference could not be ascertained, as the studies failed to analyse the relative impacts of treatment components effectively.

Interestingly there was good quality evidence indicative of success of interventions at distal follow up for Hispanic participants comparative to White groups; however again, levels of service utilisation did not appear to be related to treatment effectiveness in this group. This may have been a finding specific to TSF which actively encourages attendance. Thus the finding may relate to the extent of engagement with alcohol services rather than the result of therapeutic gain resulting from a particular technique. This differentiation may offer explanation for the finding that self-help activity was only predictive of drinking intensity in the white sample as outcomes were not so influenced by engagement. It is noteworthy that these findings were

reported for short term follow up periods only and may not be generalizable to long term outcomes. There was no evidence available to explore differences in the effectiveness of residential detoxification programmes.

Although the findings were mixed, in outpatient/community setting treatment was equally or more effective for Black groups compared with White participants. A residential aftercare ‘work for pay’ community programme was more effective for Black compared to White service users. This may have been an outcome of the differences in various sociodemographic factors (less years of education, days in employment and earnings) between participant groups.

A consideration of outcomes over time reflected consistently greater successes in the effectiveness of programmes over both short and longer term follow up periods for black service users compared white participants.

Interestingly, in one study, levels of service utilisation were correlated with self-efficacy in the white participants, as previously outlined self-efficacy has been identified as a key to addiction rehabilitation, (McKay et al. 2003), and this finding is consistent with previous studies (Warren et al. 2007; Yih-Ing. 2007).

While McKay et al (2003), indicated that abstinence was related to enhanced self-efficacy in the white group only, there are signs in this review that social support devised from attending intervention(s) may be an important mechanism for Black participants. In the studies analysed, Black participants were less likely to be cohabiting or in employment, in addition the residential ‘work for pay’ aftercare intervention appeared to be particularly efficacious for this group. While, the influence of social support cannot be analysed in this review due to absence in data the impact of this variable should be explored in future.

Finally, the available evidence indicated that Black service users had poor attendance rates than white service users for talking therapies (CBT and MET), but higher levels of participation in more practical work-for-pay community programmes. There were no clear differences between outcomes

in ethnic groups in relation to relapse prevention aftercare programmes. Evidence for the relative effectiveness of detoxification and intensive counselling interventions was also poor due to the lack of detail about the various components of different interventions in the combining of different components in single analyses. Given the incomplete reporting of outcomes no differences in treatment effectiveness for Native Americans compared to whites participants could be ascertained.

Implications for Practice

Although the results of this review are not sufficiently clear cut to directly inform practice; some interesting issues have been raised which should be explored in future research.

In the main, the response of Black service users to available treatments demonstrated more similarities than differences compared with outcomes for White service users, suggesting that existing programmes are suitable across both groups. One exception is the enhanced effectiveness of the work-for-pay residential community programme for Black participants. There is evidence to suggest that the sociodemographic characteristics of service users should form the basis to tailoring of programmes content rather than memberships of particular ethnic grouping. This is consistent with previous study of BME groups, which reported the influence of acculturation on social constructs and the potential advantages of tailoring interventions on this basis (Landerine & Klonoff. 2004). A focus in aftercare interventions on social factors such as housing and employment may provide a more effective approach to relapse prevention than other approaches.

There are indications in the review however that interventions were less effective for Hispanic groups when compared to White service users, the interventions offered precludes definitive conclusions upon which to inform practice. There was insufficient evidence on which to base conclusions for Native Americans.

Future Research Recommendations

Evidence from this review was limited to studies conducted in the USA, and there is a need to explore treatment effectiveness across other countries including the UK. Although most studies identified and quantified some aspects of the interventions delivered, discrete elements were lacking. Future research should ensure that the impact of different components and combinations of interventions can be identified. Future research should include power analyses, clear reporting rates of attendance and attrition and the reporting of sub-group characteristics to enhance current understanding of factors relating to attendance and levels of engagement with the various interventions.

Future research should explore the role of sociodemographic characteristics and acculturation in outcomes following interventions.

Detail relating to the treatment phase is lacking in the study commentaries available. Attrition rates and the characteristics of those leaving intervention programmes compared with those who complete should be clearly reported.

This review is limited to the interventions current at the time of the reported studies, however, the effectiveness of other interventions (e.g. residential detoxification) should be included in future research.

Finally, to gain a full understanding of differences of effectiveness of treatment components, there are indications from this review that it would be informative to include a study of the role of psychological factors such as self-efficacy in future research.

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Appendices: Systematic Review

Appendix 1. Electronic Search Strategy

Appendix 2 Grey Literature Electronic Search Strategy

Appendix 3 Data Extraction Form

Appendix 4 Methodological quality of included studies.

Appendix 1. Systematic Review. Electronic Search Strategy

MeSH/Subject Headings & Keyword

TERMS	AMED 1985-2008	MEDLINE 1950-2008 wk 2	EMBASE 1980-2008 wk 2	PschINFO 1806-2008 wk 2	CINAHL 1982-2007 dec wk 1	BNI 1994-jan2008
P – Racial and Ethnic Minorities in high income economies *I Rac$ Ethni$ Imigra$ Cultur$	Ethnic groups Blacks Hispanic americans Indians north American Culture Cross cultural comparison	Continental population groups African continental ancestry group African Americans Indians Central Americans North Americans South Americans Inuit's Asian Continental Ancestry Group Oceanic ancestry group Ethnic groups Arabs Gypsies Hispanic Americans Jews Refugees Immigrants and emigrants Cultural Characteristics Cross cultural comparison Cultural diversity Acculturation Culture Evolution Culture	Race Caucasian Negro Ethnicity Race difference Ethnic difference Cultural fear Ethnic or racial aspects Ethnography Ethnology Immigrant Refugee Minority group Cultural Sensitivity Cultural bias	Race Ethnography Ethnology Racial and ethnic attitudes Racial and ethnic differences Racial and ethnic groups Sociocultural factors Whites Minority groups Alaska natives American Indians Arabs Asians Blacks Cultural sensitivity Hawaii natives Hispanics Indigenous population Inuit Jews Multiculturalism Pacific Islanders Racial and ethnic discrimination Racial and ethnic groups Ethnic identity Regional differences Cross cultural differences Refugees Human migration	Minority groups Race factors Race relations Racism Culture Acculturation Cultural diversity Cultural values Ethnic group Ethnography Ethnology Amish Arabs Asians Cambodians Chinese Filipinos Japanese Koreans Latinos Vietnamese Blacks Hispanics Indigenous people Aborigines Eskimo Native Americans Jews Whites	Ethnic group Refugee Culture Discrimination Transcultural Race

				Immigrat$ Acculturation Cross cultural communication Cross cultural psychology Cultural sensitivity Multiculturalism		
I – Alchol$ AND Behaviour modification Program$, Intervention	Alcohol (all listed alcohol) AND Behavio$ modification Humans Rehabilitation Exercise therapy Behaviour Therapy Cognitive Therapy Programme Evaluation mental disorders Comparative study Psychology social Rehabilitation vocational	Alcohol (all listed alcohol) Drinking behave$ Alcohol drinking Alcoholism Alcohol-related disorder Alcohol$ intoxication Wernicke encephalopathy Substance related disorder AND Alcoholics anonymous Self-help groups Substance abuse treatment centres Psychological techniques Behaviou$ control Cognitive therapy Relaxation techniques Psychoanalytic therapy Psychotherapeutic processes Psychotherapy Brief Psychotherapy Psychotherapy Rationale Emotive Reality therapy Behavio$ control Patient care Rehabilitation	Alcohol (all listed alcohol) Methanol Drinking behaviour Bing drinking Alcohol abuse Addiction Alcoholism Alcohol consumption Alcohol intoxication Alcohol withdrawal Drug Abuse AND Alcoholics anonymous Alcoholic rehabilitation program Community based rehabilitation Constraint induced therapy Psychosocial therapy Drug dependency therapy Rehabilitation Cognitive therapy Behavio$ therapy Cognitive rehabilitation Group therapy Therapeutic community Behavi$ modification Psychotherapy Drug Dependence treatment	Alcohols Ethanol Isoproterenol Methanol Methoxamine Alcoholism Addiction Alcohol abuse Alcoholic psychosis Alcohol drinking pattern Alcohol intoxication Alcohol withdrawal Alcohol abuse Alcoholic drinking patterns Drug Abuse Binge drinking AND Alcohol rehabilitation Drug rehabilitation Alcoholics anonymous Detoxification Alcohol withdrawal Rehabilitation counselling Alcohol rehabilitation Twelve step programme Community services Treatment Behavioural modification Cognitive techniques Cross Cultural treatment Health care services Interdisciplinary	Alcohols Alcohol, ethyl Alcohol, Methyl Alcohol, propyl Glycols Ethylene Glycols Propandiols Phenylpropanolamine Sugar alcohols Substance abuse Alcohol abuse Alcohol drinking Drinking behaviour Addiction Binge drinking Alcoholism Alcoholic intoxication AND Alcoholic anonymous Support group$ Alcohol rehabilitation Substance abuse Rehabilitation programs Alcohol rehabilitation programs Drug rehabilitation programs Psychological technique Psychotherapy Behaviour modification Behaviour therapy Relaxation techniques Psychotherapy brief	Alcohol misuse AND Behaviour Modification Programmes

			Treatment outcome	treatment Medical treatment Online therapy Outpatient treatment Psychotherapeutic techniques Psychotherapy Rehabilitation Relaxation therapy Clinics Health care delivery Health care seeking behaviour Intervention Self-help techniques Treatment compliance Treatment outcomes Treatment barriers	Support, psychosocial Rehabilitation, psychosocial Treatment outcomes Substance use treatment Behaviour therapy Cognitive therapy Relaxation techniques	
Hits		271	372	945	278	0

Appendix 2. Systematic Review. Grey Literature Electronic Search Strategy

SearchTerms:

Rac$, Ethni$, Immigra$, Cultur$

AND

Behavi$ modification program$, Intervention

Site	***Hits***
National Research Register	127
SIGLE	116
Alcoholics Anonymous	1
The Australian Centre for Addiction Research	0
Institute of Alcohol Studies	0
The National Institute of Alcohol Abuse and Alcoholism	0
The US Department of Education – Centre for Drug and Alcohol Abuse	0

Appendix 3 Systematic Review. Data Extraction Form

Year of Paper:

Authors:

Journal:

Journal Issue: **Date:**

Reason for Inclusion *(must tick all to be included)*

1. □ Longitudinal
2. □ Comparison white group
3. □ Alcohol
4. □ Intervention Details – Behaviour Modification Programme available in high income economies
5. □ Sample >18 years
6. □ Outcome measure of alcohol intake

Reason for Exclusion *(tick any excluded)*

7. □ Psychiatric Population
8. □ Prison Population
9. □ Single Sex Studies

Include the paper? *(circle one)* **YES** **NO**

Abstract Screen:

Appendix 4. Systematic Review. Methodological Quality of Included Studies

Criteria

1. The study identified (named) and quantified (analysed separately for separate therapies delivered) different formats of intervention (e.g. Cognitive Behavioural Therapy, Twelve Step Facilitation, etc.)
2. The study identified (named) and quantified (analysed separately for separate stages delivered) different stages of treatment (outpatient, community, inpatient, detox, aftercare).
3. Timeline follow-back, biochemical validation or alternative method applied to enhance validity of self-report.
4. The study included details of experience (e.g. training, ethnicity congruence) of interviewers to reduce demand characteristics.
5. The study reported attrition.
6. There is a baseline measure of alcohol dependence/consumption requirement.
7. The study measured frequency AND density of alcohol consumption at follow up.
8. The study measured the proportion of treatment attended.
9. The study measured previous treatment utilisation.
10. Evidence of power analysis having been conducted.

Quality of the study was reported as a score 0-10 for fulfilment of the criteria outlined above. The scores were ranked to provide a categorical quality; poor (0-3), moderate (4-6) or high (7-10).

Studies	***Methodological Quality of Review Studies***												
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**/10**	**Rank**	**Quality**
Arroyo et al (1998)	**-**	**X**	**X**	**-**	**X**	**X**	**X**	**X**	**-**	**-**	**6**	**3**	**M**
Rosenheck & Seibyl (1998)	**X**	**X**	**-**	**X**	**-**	**X**	**-**	**X**	**-**	**-**	**5**	**4**	**M**
Roland & Kaskutas (2002)	**X**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**X**	**-**	**2**	**5**	**P**
McKay et al (2002)	**X**	**X**	**X**	**-**	**-**	**X**	**X**	**-**	**-**	**-**	**5**	**4**	**M**
Arroyo et al (2003)	**X**	**X**	**X**	**-**	**X**	**X**	**X**	**X**	**X**	**-**	**8**	**1**	**H**
Brower & Carey (2003)	**X**	**X**	**-**	**-**	**X**	**X**	**X**	**X**	**X**	**-**	**7**	**2**	**H**
Tonigan (2003)	**X**	**-**	**X**	**-**	**-**	**X**	**X**	**X**	**X**	**-**	**6**	**3**	**M**
Villaneuva et al (2007)	**X**	**-**	**X**	**-**	**-**	**X**	**X**	**X**	**X**	**X**	**7**	**2**	**H**

P- Poor study quality
M – Moderate study quality
H – High study quality

Promoting Change in Multiple Health Risk Behaviours: Including Brief Advice for Alcohol Harm Reduction in the English Stop Smoking Service

Abstract

Risky lifestyle behaviours have a multiplicative impact on both the length and quality of peoples' lives (Khaw et al. 2008). In order to improve health outcomes and reduce social inequalities in these outcomes, behaviour change services are recommended by health care and public health professionals (Michie et al. 2009).

There is evidence to show that engagement in more than one form of health risk behaviour is common at a population level (for example, many smokers and also engage in potential harmful levels of alcohol intake), yet currently, behaviour change interventions focus on change in a single risk behaviour (e.g. smoking cessation). As partaking in more than one health risk behaviour leads to a multiple, rather than an additive risk for poor health outcomes and in order to maximise the potential of the current infrastructure of behaviour change services, this research programme aimed to examine the feasibility of utilising an existing behaviour change service (smoking cessation) to also deliver an intervention for further behaviour change (alcohol harm reduction).

A four step process was undertaken. Following the systematic review reported at the beginning of this thesis, a further series of reviews of the evidence base relating to intervention design and implementation were undertaken in order to inform the design of the research programme. Secondly, following an assessment of existing service processes and staff training needs, two studies were implemented. Study 1 was designed as a quantitative study of behaviour change in clients attending a stop smoking intervention into which a second intervention, to address excessive alcohol consumption was incorporated. For a variety of reasons, this study failed to generate sufficient data for the planned analyses to be conducted. Study 2, a qualitative analysis of stop smoking service practitioners perceptions about the feasibility of delivering this intervention, revealed, notwithstanding the initial training prior to the commencement of Study 1, the practitioners' normative beliefs about alcohol consumption had affected their willingness to deliver the alcohol-

related intervention. To support the incorporation of alcohol-related interventions into existing services more comprehensive training will be required, including the need to challenge the beliefs and values of health professionals.

Contents

Glossary of Terms

ABA	Alcohol Brief Advice
ANCOVA	ANalysis Of COVAriance
ANOVA	ANalysis Of VAriance between groups
AOEQ	Alcohol Outcome Expectancies Questionnaire
AUDIT	Alcohol Use Disorder Identification Tool
BMI	Body Mass Index
CHD	Coronary Heart Disease
CO	Carbon Monoxide
COM-B	Capability, Opportunity, and Motivation Behaviour system'
CVD	Cardiovascular Disease
DALYs	Disability Adjusted Life Years
DAAT	Drug and Alcohol Action Team
DESQ	Drinking Self Efficacy Questionnaire
DH	Department of Health
et al	and others
FRAMES	Feedback, Responsibility, Advice, Menu, Empathy and Self-efficacy
FTND	Fagestrom Test for Nicotine Dependence
GP	General Practitioner
HCP	Health Care Professional
HSfE	Health Survey for England
IBA	Identification and Brief Advice
ISBN	International Standard Book Number
LBC	lifestyle behaviour change

LRB	Life style Risk taking Behaviours
MRC	Medical Research Council
MRFIT	Multiple Risk Factor Inventory Trial
MSc	Master of Science
MoCAM	Models of Care for Alcohol Misuse
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NK	not known
ONS	Office of National Statistics
PBC	Perceived Behavioural Control
PCT	Primary Care Trust
PH1	Public Health Guidance 1
PIN	Participant Identification Number
PIS	Participant Information Sheet
ppm	parts per million
R&D	Research and Development
RCT	Randomised Controlled Trial
SCM	Social Cognition Model
SEQ-12	Smoking Self-Efficacy Questionnaire
SHIP	Southampton heart integrated care project.
SIPS	Screening and Intervention Programme for Sensible drinking
SLT	Social Learning Theory
SPSS	Statistical Package for Social Sciences
SRT	Self-Regulation Theory
SSS	Stop Smoking Services
TCM	Tobacco Control Manager
TTM	Trans Theoretical Model of Change

TPB	Theory of Planned Behaviour
UK	United Kingdom
USA	United States of America
UWE	University of the West of England
WHO	World Health Organization
yrs	years
%	Percent
n=	total number

Chapter 1

Overview of the Research Process: The Iterative Process of Designing the Research

1.1 Background

I enrolled on the Professional Doctorate in Health Psychology research programme in September 2007. At the time, I was employed as an advisor for a public health implementation team with a specific focus on alcohol, within the Department of Health. During my first year I completed the systematic review which explored the effectiveness of behavioural interventions to reduce alcohol consumption. The review adopted a specific focus on studies with a comparative design, which examined relative equity and disparity in outcomes across ethnic groups. This review and my work as an advisor at the Department of Health highlighted the prevalence of multiple health risk behaviours occurring in parallel and in contrast, the reliance on single behaviour interventions. Accordingly I embarked on the process of designing a research programme to explore the feasibility of developing and implementing a public health intervention which would focus on more than one health behaviour.

The process of designing this research was further informed by synthesising previous reviews of low intensity interventions, including 'brief advice' and 'brief interventions'. This type of intervention was of great interest within the Department of Health at the time, due to the potential for widespread rollout and the relatively low costs of these approaches. This synthesis further emphasised the need to develop interventions which respond to the prevalence of multiple risk behaviours in the general population and also the need to achieve 'buy-in' from the professionals involved in the delivery of the intervention. A third review of relevant theoretical frameworks to guide the development and implementation of a new intervention highlighted the potential relevance of Social Learning Theory, in particular the constructs of self-efficacy and outcome expectancies. More detail of the iterative process

of reviewing the relevant literature and designing the research is given below.

Having developed the design of two studies (reported in Chapters 5 and 6) on the basis of these reviews, significant delays relating to obtaining ethical and R & D approvals were then encountered in the process of implementing the research. The data collection period for the two studies came to an end in 2011. Subsequently, further delays in the process of analysis occurred due to a series of changes to my employment and in my personal circumstances. It was therefore necessary to conduct a further literature review in 2013 to facilitate the interpretation of the findings of the research in the context of research current at that time. The iterative process of design and reporting is considered in more detail using the following framework:

1.2 The role of the Systematic Review in the initial process of research design

1.3 Reviews of relevant evidence in additional areas:

- prevalence and patterns of health risk behaviours
- the components and effectiveness of existing low intensity interventions
- evidence relating to the role of health professionals in the process of behaviour change
- a review of potential theoretical frameworks to guide the shape and content of the research programme
- contextualising the eventual results of the research programme in the context of current literature

1.2 The role of the Systematic Review in the initial process of research design

The topic choice for the systematic review was heavily influenced by my employers and sponsors of my attendance on the doctorate programme - namely the Public Health Inequalities team at the Department of Health.

Within my role in this team, my responsibilities included the dissemination of equitably effective alcohol harm reduction interventions. As the role was focussed on population interventions, there was a particular interest within the team in the implementation of 'Tier 1', brief advice interventions to reduce risk. (National Guidance for the lifestyle behaviour change programmes define 3 tiers of interventions, varying in complexity and intensity. These are outlined in further detail in Chapter 2).

There was insufficient literature at the time on which to conduct a systematic review in this area, thus the focus of the review was defined as the effectiveness of interventions for dependent drinkers and the relationship of socio-economic variables to outcomes of the interventions.

A number of findings from the systematic review process informed the initial design of the research programme. Firstly, the examination of potential associations of socio-demographic factors and the outcomes of interventions was inconclusive in the systematic review. Instead, behavioural motivations and psychological factors were recommended as key constructs in explaining differences in outcomes. Furthermore, the evidence suggested that screening for health motivations with the intention of providing tailored interventions was likely to be more effective than an initial screening based on population subgroup membership.

Secondly, previous research in the field was dominated by a focus on adults designated as 'dependent' drinkers, yet alcohol consumption can also have detrimental psychological and physical impacts on those who do not fit the criteria of 'dependence'. This led to the aim of designing a research programme which could address this gap in the literature by examining the effectiveness of an intervention designed to address alcohol consumption in a broader range of the population.

Finally, the systematic review highlighted that achieving clarity about the components of any intervention is fundamental to the quality of the proposed research and to the reliability of the results. This was absent in most of the reviewed papers. For this reason the decision was made to combine existing

standardised, well documented interventions in the research programme. This decision triggered a series of additional reviews.

1.3 Additional reviews of relevant evidence

A series of reviews of the evidence available up to 2009 were conducted using Embase, PubMed, PsychInfo, the Cochrane Database and Medline.

Literature review of the need for intervention (further reported in Chapter 2)

This review considered the role of risky lifestyle behaviours in morbidity and mortality. National survey data were reviewed to explore the prevalence of engagement in behaviours and to understand the current need for interventions in the population in England – the setting for the proposed research programme. This review highlighted the significant impact of lifestyle on quality and length of life and importantly, also unearthed evidence that a significant proportion of the population are engaging in more than one risk-taking behaviour simultaneously. The potential benefits of behaviour change interventions which reflected the reality of engagement in more than one behaviour at one time (in contrast to the existing focus on single health behaviour interventions) was chosen as the key focus of the developing research programme. In view of particular focus within the Department of Health at the time on the considerable damage to health caused by alcohol consumption, the decision was made to focus on an intervention on this alongside an additional risk behaviour. A review of existing behaviour change interventions was then undertaken to inform the choice of this additional behaviour.

Literature review of existing individual level public health behaviour change interventions (see Chapter 3)

This review comprised a synthesis of reviews of behaviour change interventions together with an examination of the national guidance for England lifestyle behaviour change services current at the time. This work was conducted using the search terms ‘brief advice’, ‘brief intervention’, ‘behaviour change interventions’ and ‘lifestyle behaviours’. The review which influenced my thinking the most was authored by Michie et al (2009). This

paper highlighted the lack of clarity in previous literature about the various components in interventions and in relation to the relative effectiveness of the different elements of any one intervention. The authors proposed a taxonomy of behaviour change intervention components, using the context of interventions promoting healthy eating and increasing physical activity as the focus. It was again resolved to ensure clarity in relation to the components of intervention and in the use of terminology to describe these components.

The majority of interventions in England at the time of this review were classified as 'Low Intensity' (NICE Public Health Guidance (6) behaviour change (2007). These are defined as tiers; *tier 1* refers to: 'brief advice', the communication of risk and advice on where to access support to reduce risk and *tier 2* refers to 'brief intervention'. This expands the tier 1 approach by offering support to consider the costs and benefits of engaging in the behaviour, alongside access to further services. Tier 1 intervention was chosen for this study, as identification and brief advice for alcohol harm reduction was the priority for public health intervention at the time of this study (MoCAM. 2006).

The review of existing behaviour change services pointed to the use of the Tier 3*,* a specialist Stop Smoking Service as the most appropriate vehicle for the proposed study. The stop smoking service was well established at the time, had a protocol for the training of staff and a well-documented intervention. The service also accesses a broad population of clients rather than focussing on one particular demographic. The review also identified alcohol consumption as common in the smoking population and further highlighted the relevance of linking these two behaviours, as drinking alcohol is related to reducing the likelihood of success in smoking cessation and to a greater likelihood of relapse in those who manage to quit initially.

The review of the literature relating to Tier 1 and 2 interventions highlighted the challenges of encouraging health professionals to adopt new interventions within their practice. Accordingly, a further review was undertaken to focus on this variable.

Reviewing the role of health professionals in the process of behaviour change (see Chapter 3)

This review was undertaken using the search terms; ‘brief advice’, or ‘brief intervention’, or ‘patient education’ and ‘health personnel attitude’ or ‘doctor patient communication’. The search results using these specific terms identified very few specific research studies at this time. The implementation studies identified in the literature review for public health interventions highlighted the importance of ensuring that the health professionals involved in the delivery of interventions perceived them to be of relevance to their role and their client group. As a consequence, the need to get the health professionals on side in the proposed research was given a high priority in the preparatory stages of the research, the training of the professionals who were to implement the intervention and in the qualitative interviews designed to elicit their views. In order to avoid the inconsistencies in implementation practice unearthed during the literature reviews, the framework proposed by Michie et al. 2005 – ‘the Domains of healthcare professional changes’, was adopted to act as a prompt for the researcher to ensure all aspects were covered, and to provide clarity about the study in subsequent reporting.

Reviewing potential theoretical frameworks to guide the development of behaviour change interventions (see Chapter 3)

A review of models of health behaviour change and their potential in assessing lifestyle behaviour change following an intervention was conducted. As part of this process, components common to different models were noted. It was observed that social influences and outcome expectancies were considered important in the Social Learning Theory (Bandura. 1977), the Self-Regulation Theory (Carver & Sheider. 1998) and the Theory of Planned Behaviour (Ajzen. 1991), and appeared particularly relevant to the design of the psycho-educational approaches used in Tier 1 and 2 interventions. This can be seen by the information in brief advice for alcohol which is based on communication of both physiological and social risks (negative outcome expectancies), alongside images of social pressure of continued drinking (normative influence). This includes UK based public

health campaigns modelled on Tier 1, brief advice, with elements communicating risk ('how much will your drink cost you?'), focusing on the negative outcomes of revoked driving licence, custodial sentences and lost employment following conformity of social pressure to drink) and information on how to access support. Of particular note in this review process were constructs included in Social Learning Theory (SLT) (Bandura. 1977). This theory posits that enhanced self-efficacy influences mastery, and that mastery increases efficacy in achieving further change, providing an exciting basis for the development of an intervention in which the achievement of mastery in changing one behaviour might increase the likelihood of achieving change in a second. Adopting a 1+1 model would also support the utility of combining existing, well documented interventions and increase the feasibility of implementing such an intervention within the existing health promotion infrastructure. Outcome expectancies could have also demonstrable impact on all tiers of interventions and changes in beliefs about one risk behaviour may have the potential to result in changes in expectancies following engagement in further risk behaviours.

Synthesising the reviews: The Research Programme

The iterative process of reviewing the literature resulted in the design of a research programme to examine the feasibility of delivering interventions tackling more than one lifestyle behaviour, comprising two studies. Following initial preparatory work, including the training and winning of the hearts and minds of the relevant health professionals, the first, quantitative repeated measures study was designed to explore the feasibility of using an existing single lifestyle behaviour change service (the stop smoking service (Tier 3) as a vehicle for the delivery of an additional intervention (brief advice (Tier 1) focussed on a second lifestyle behaviour (alcohol consumption). This study also aimed to examine whether changes in self-efficacy towards a primary behaviour also translated into enhanced self-efficacy for another behaviour change. The repeated measures also included outcome expectancies. The second, qualitative interview study reflected the priority of eliciting the views of health professionals about the feasibility of such an intervention and was

also consistent with the British Psychological Society guidance for the implementation of an intervention.

Reviewing the results of the research programme in the context of current literature (see Chapters 6 & 7)

Due to the considerable delays between the design and the completion of the study and as the result of further delays in the writing of the thesis, it was necessary to conduct a final review of any further developments in the literature to ensure that recommendations developed out of the research remained current. This process was conducted in 2013/4.

The literature post 2009 was examined for additional work conducted in relation to multiple behaviour change interventions, and the use of brief advice and brief interventions.

As the research programme had utilised the domains of change for healthcare professionals, a further review of papers referencing this publication by Michie et al 2005, including and after 2009 was also conducted. The material identified in these reviews are included in Chapters 6 and 7.

1.4 Structure of the thesis

This chapter has described the iterative approach to the design and implementation of the research study. The remainder of the thesis has been structured to reflect this. Each chapter is presented chronologically, in the order of activity undertaken throughout the study. Chapters 2 and 3 outline the literature reviews which were conducted in 2009 to inform the design of the study. Chapter 4 provides details of the preparatory work to engage an NHS service in refining the study design. This was also undertaken in 2009. Chapters 5 and 6 present the rationale and design of the study which was informed by the literature reviews conducted in 2009 and approved by the NHS Research Ethics Committee. Following delays in local service R&D approvals, the implementation of the intervention and the data collection were carried out in 2010 and analysis was completed in 2011. Following extenuating personal circumstances the write up of the thesis was delayed

until 2014. Chapter 7 provides a synthesis of findings. To enable consideration of the study findings in the context of the most up to date publications, the synthesis was informed by and illustrates further reviews of the literature up to March 2015.

1.5. Summary

The delays in the design, implementation and reporting of the research were frustrating, yet these delays reflected the very real challenges in conducting real world research and they did allow for an iterative process of literature reviewing and the ongoing development of the research programme. This process led to a design that included two parallel studies. These were; i) a study of the feasibility of achieving change in more than one health risk behaviour and of the process of behaviour change, specifically the influence of 'mastery' on self-efficacy to achieve further changes following one successful change in behaviour and ii) the beliefs of healthcare professionals regarding the feasibility of implementing such an intervention. These studies are reported in the following chapters of this thesis.

Chapter 2

Background to the Research Programme

2.1 Background

The focus of this programme of research grew from public health priorities that were particularly pertinent to my work at the Department of Health (DoH) at the time of initiating this work. The DoH's overarching priority was to tackle health inequalities, and it was this focus that guided my initial systematic review. However, in the process of this review, other issues came to the fore. Evidence that some lifestyle behaviours (for example, smoking, excessive alcohol consumption and poor dietary intake) are related to significant health risks and associated reductions in both the quality and the length of lives of those affected, was by then well established. Evidence-based interventions had become available to support reductions in single health risk behaviours (for example, smoking), however, epidemiological data derived from Westernised Societies indicated that, engagement in more than one health risk behaviour (for example, smokers who also consume excessive levels of alcohol) was and remains common at a population level (James. 2008). Engaging in more than one risky lifestyle behaviour leads to a multiple, rather than an additive risk of poor health outcomes (Khaw et al. 2008). Furthermore, the prevalence of people engaging in more than one risk behaviour is consistent with sociodemographic indicators of inequalities in health (Michie et al. 2009). Thus, a relevant public health priority appeared to me to be to develop and deliver lifestyle interventions which addressed more than one health risk behaviour. Ideally these should impact all population groups and have particular relevance to those from relatively disadvantaged backgrounds. My work at the Department of Health had also made me acutely aware that the efficient use of existing healthcare resources is fundamental to the sustainability of efforts to promote improvements in public health within a healthcare system with

limited funding (Annell & Williams. 2000), thus my thinking was influenced from the outset by the need to build on existing public health services.

As a first step in examining the feasibility of developing current single-issue services to deliver interventions designed to promote change in multiple risk behaviours, literature reviews were undertaken to examine:

i) The importance of various lifestyle behaviours in health outcomes (to inform the target behaviours)
ii) The prevalence of multiple health risk behaviours
iii) Current service provision to support changes in key health risk behaviours

2.2 Mortality, morbidity and the role of risky lifestyle behaviours

Circulatory diseases (including heart disease and stroke) in both men and women currently account for 33% of all deaths in the UK (Statistical Bulletin: Death Registration by Cause ONS, 2009). The most common causes of circulatory diseases are atherosclerosis and hypertension, affecting 2.7million in the UK population. Contributory factors for circulatory disease include smoking, high blood pressure (diagnosed in 32% men and 27% women. HSfE. 2009), high cholesterol and diabetes. Over 80% of these conditions are attributable to modifiable behaviours. Harmful levels of alcohol are consumed by over 24% of the adult population in England, (Jenkins et al. 2001). Regular consumption of three or more alcohol based drinks a day and/or tobacco smoking, independently lead to increases in blood pressure with the consumptions recognised as significant contributory factors for hypertension (Malhorta et al. 1985; Jenkins et al. 2001) and stroke (Wannamethee et al. 1995, You et al. 1997).

Circulatory diseases are closely followed by cancers (accounting for 29% of the mortality rate), with lung cancer the most prevalent form of the disease across both sexes. This is the only cause of death in females which has increased since 1999 (HSfE. 2009). Tobacco smoking, engaged in by 24% men and 20% women (HSfE. 2009) is the leading

cause of lung cancers. Other risk factors for specific forms of cancer include alcohol misuse and dietary imbalance. Respiratory diseases account for 19% of the mortality rate in the UK (Office for National Statistics. 2009), with smoking implicated in increasing the risk for developing these diseases. In males, over the past decade liver disease (with alcohol consumption as the biggest risk factor) is the only disease which is contributing to an increase in mortality (Office for National Statistics. 2009).

Diet has a significant impact on the incidence of chronic conditions. Obesity, caused in the main by calorie intake in excess of energy expenditure is considered to be a chronic condition with many effects on physical health (Haslam & James. 2005). A high volume of body fat, leads to strains on other parts of the body and for over 50% of the population will result in Type II diabetes (Masso. 2008). Type II diabetes is characterised by the impaired ability to manage uptake of glucose. Furthermore, high blood pressure and atherosclerosis due to the fats invading the central organs can increase the risk of stroke (Seung-Hanet al. 2003) and cancer (Bianchiniet al. 2002).

In addition, the Health Survey for England (HSfE) (2009) identified 41% men and 43% women as living with these and other long term illnesses, with half of these reported as being debilitating. Lifestyle factors are well reported as having a causal or contributory influence across the outlined long term conditions and others such as musculoskeletal (MSK) disorders where lifestyle is the main factor. One in four of the population will experience MSK disorders, with weakness or fracture to the bones and muscles in which malnourishment, sedentary lifestyle and alcohol or tobacco use have been significant contributory factors (eumusc.net. 2009, Cole. 2004.

The World Health Report – Reducing Risks Promoting Healthy Lives (2002), outlines tobacco smoking, alcohol abuse and obesity as the leading preventable causes of mortality in the industrialised world. Lifestyle risk taking behaviours are accounting for an increase in

Disability Adjusted Life Years (DALYs) and are subsequently a huge economic burden to society (World Health Organisation, 2002). Together tobacco smoking and alcohol drinking have been reported to account for 25% of the DALYs lost across Western Society (World Health Organisation. 2002). A European study (Busse et al. 2009), reports the direct impacts of lifestyle risk factors on DALYs, with alcohol accounting for 10.7%, manifesting as vascular disease (hypertension) and alcohol dependence. UK data suggests that this percentage is increasing, with 43% of men and 31% of women currently drinking more than the recommended alcohol units each week (HSfE. 2009). Obesity, resulting from poor diet and insufficient physical activity, is now regarded as impacting on the Western world in epidemic proportions (James. 2008). Over 23% of the UK population are obese, and this percentage is projected to rise in coming years (HSfE. 2009).

An individual's behaviour is now recognised as the greatest determinant of variance in many health outcomes (Shroeder, 2007) and as a modifiable component in reducing the risk of disease occurrence and subsequent prognosis. Accordingly, methods of reducing levels of engagement in risk-taking lifestyle behaviours are now considered as key components of interventions to improve poor health outcomes (Xin et al. 2001), and changes in these, alongside more objective physiological markers such as blood cholesterol, sugars and lipids (Hippisley-Cox et al. 2007), are included as outcome measures.

2.3 The potential of interventions in reducing risk

Smoking cessation has been found to significantly reduce mortality in those with and without existing co-morbidities (Mohiuddin et al. 2007). The level of risk of developing lung cancer has been identified as having a direct correlation with the volume of cigarettes smoked and this relationship is seen in those who are ex-smokers to a greater extent compared with those who have never smoked (Pettoet al. 2000). Smoking cessation has shown immediate benefits in relation to Coronary Heart Disease (CHD), with the relative risk of mortality from heart disease

in ex-smokers dropping to that of non-smokers within 3 years of cessation (Okene et al. 1990; Critchley et al. 2003). Reviews highlight that smoking cessation in those with a diagnosis of CHD results in a significant increase in life expectancy.

Reductions in alcohol consumption have been reported to result in a significant dose-dependent lowering of mean systolic and diastolic blood pressure (Miller et al. 2005). This dependent relationship between alcohol use and blood pressure illustrates that effective lifestyle behaviour change interventions are desirable.

The physiological outcomes of obesity improve as the result of reductions to weight, management of blood glucose, and cholesterol levels through controlled sugar and fat intake and increased physical activity levels. In addition, dietary changes, such as reductions in the consumption of salt in non-obese patients have also had a significant impact on reducing rates of hypertension and stroke (He & McGregor. 2003).

It is evident that risky lifestyle behaviours impact on the risk of morbidity and mortality, and also that interventions to reduce or modify these behaviours can improve health outcomes. However, to date, most of the statistics relating to prevalence and the impact of interventions have related to single risk behaviours.

2.4 Multiple lifestyle risk taking behaviours

In public health circles, the term ‘multiple lifestyle risk taking behaviours’ refers to engagement in two or more lifestyle behaviours including smoking, alcohol misuse, physical inactivity, and dietary imbalance.

There is now clear evidence that these risk taking lifestyle behaviours often co-occur and result in multiple risks to health (Ebbert et al. 2005; Gulliver et al. 2006). A population level, 10 year longitudinal UK study (1993-2003), illustrated that 21% of men and 24% of women were engaging in four risk behaviours (Poortinga. 2007). Disappointingly however the authors did not consider patterns of co-occurrence of individual lifestyle behaviours in their analysis. A large scale, prospective

population study comprising a sample of over 20,000 people conducted by Khaw et al (2008), was the first to highlight the increased risk of poor health outcomes across the major risk behaviours of alcohol misuse, smoking, physical inactivity and unhealthy diet. The authors identified a four-fold increase of 'all-cause' mortality in those engaging in all four risk behaviours compared to those who did not engage in any. Unsurprisingly the increased mortality rate was most evident in relation to cardiovascular disease. Startlingly, it was reported that engagement in all four of these behaviours equated to a risk of the loss of 14 years of life.

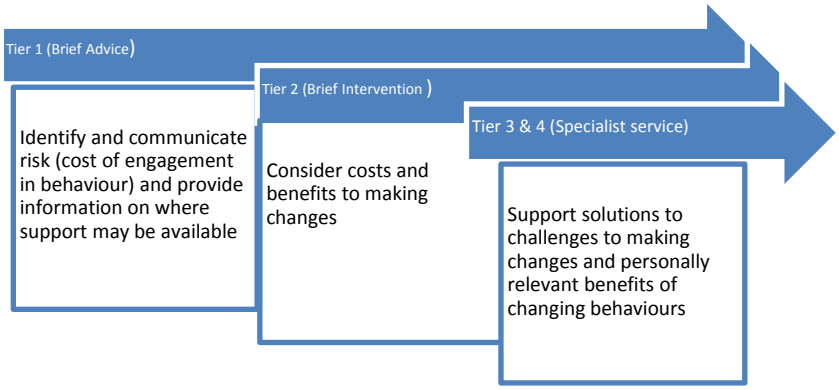
2.5 The characteristics of UK populations engaging in multiple risk behaviours

Significantly widening differences in lifestyle health-seeking behaviours are observable across different socio-economic groupings, regardless of gender, age or ethnicity (NHS and Social Care Information. 2004; ONS 2005). A positive correlation is observed between increasing level of deprivation and the number of risk taking behaviours (Schudit et al. 2002, Berrigan et al. 2003; Department of Health, Healthy Foundations Lifestyle Segmentation. 2009), however, the social gradient, although significant, does not account for all the variance in those engaging in multiple risk taking behaviours (Houston et al. 2005; Leeman et al. 2008), and psychological factors are also thought to be important in explaining which factors are critical in relation to behaviour change (Kaushik et al. 2009).

2.6 The current provision of services to promote changes in risky lifestyle behaviours in the UK

Current interventions in the UK are in the most part designed to promote change in single risk behaviours. Interventions include 'brief advice', 'brief interventions' & specialist more intensive interventions, usually delivered over a number of sessions to individuals or small groups of clients. Figure 2a brings together each of the NICE guidance documents for individual lifestyle change and illustrates the 4 levels of intervention represented.

Figure 2a. Three Tiers of Interventions for Lifestyle Behaviour Change



Brief 'advice' is the communication of risk information to raise awareness and prompt the use of specialist services, or the change in behaviour. Changes in behaviour following receipt of risk information may occur where there was no previous knowledge of risk. These changes can be quickly adopted and these self-directed small changes can achieve observable reductions in risk (NICE Clinical Guidance 43. 2006). Brief 'interventions' are designed to increase motivation to initiate changes in behaviour in cases where risk is recognised, but the motivation to initiate change either directly or via uptake to specialist services has been lacking. Brief interventions provide the opportunity to discuss perceived challenges to changes and subsequent goal setting to overcome these Goal setting in those with sufficient self-efficacy may lead to self-directed behaviour change. For those who identify challenges which include addiction or other psychological barriers the goal may be access to 'specialist services' designed to address these (NICE Public Health Guideline 1. 2006). Services provided to promote smoking cessation, reductions in harmful levels of alcohol consumption and weight management are outlined in the following section.

2.6.1 Smoking cessation services

Intervention guidance informed by Cochrane Systematic Reviews identifies that smoking cessation is most effectively achieved through the combination of behaviour change programmes and nicotine replacement

pharmacological therapies (Lancaster & Stead. 2008). This combination, delivered in a group or one-to-one format in the context of within a 6 week programme is the current Gold Standard service available to smokers, with biochemically validated success rates of behaviour change at four weeks follow-up reported as 50% (West et al. 2001). In light of the evidence base, this service is now available as standard by every primary care provider in England (NICE Public Health Guideline 10. 2008). The evidence for the effectiveness of a regular weekly support programme is underpinned by Carver and Sheider's (1998) model of self-regulation, together with motivational interviewing approaches to support the process of change (Vansteenkistie et al. 2006).

Although this type of specialist intervention is currently recognised as the most effective approach, lower intensity interventions have also been considered in order to reduce resource requirements. Lancaster and Stead's (2008) Cochrane review included the effectiveness of self-help materials and varying formats of lower intensity intervention (e.g. text messages and face to face) and highlighted some areas for potential developments in this area. Although the impacts were less dramatic compared to more intensive regular sessional support for smoking cessation, tailoring for self-support materials was found to be related to changes, suggesting that personalised brief intervention materials may be sufficient to trigger the initiation of change, however there has been no evidence of effectiveness with long term follow up. Furthermore, no direction has been provided for achieving the required levels of engagement from health care workers and this is likely to be fundamental to the commitment necessary to develop and support tailored interventions for clients.

However, evidence for other forms of brief advice is equivocal. Early evaluations of brief advice have focussed not on content but instead on the mode of delivery i.e. telephone or text message (Hennrikus et al. 2002) and have shown no significant differences in behaviour change or health outcomes. However, more recent studies have highlighted that standard messaging is an ineffective approach compared with outcomes

from interpersonal, pro-active engagement strategies (Joiltrop et al. 2005, McClure et al. 2006). This reinforces the need for face to face interventions to optimise outcomes. A Cochrane Systematic Review conducted by Stead et al (2008) examined the effectiveness of brief advice and interventions, delivered by health care practitioners (the distinction and impact of the variance between brief advice and interventions is not outlined in the paper). The review highlights the marginal impact (1-2% success rate) of brief advice on smoking cessation. The Systematic Review questions the quality of the content of brief advice and interventions and of the studies evaluating their effectiveness. The studies included in the review provided little, if any detail of the necessary skills and intervention content over and above the use of motivational interviewing techniques, which were a common component. In addition, the outcome measures in the included studies focused on the initiation of change in the target behaviour, rather than on rates of accessing and engaging with specialist services, which is the objective of many brief advice and brief intervention campaigns (NICE Public Health Guidance 1. 2006).

Current NICE guidance on brief interventions and advice for referral for smoking cessation (PH1) (2006), recommends that primary care practitioners initially provide all smokers with brief advice on how to access support services and refer all smokers for specialist interventions.

2.6.2 Alcohol harm reduction interventions

Current interventions designed to address the harmful effects of alcohol in the UK are structured in four tiers according to the level of physical and psychological dependence, based on guidance in Models of Care for Alcohol Misuse (MoCAM) (2006). MoCAM was developed by the National Treatment Agency and the Department of Health following the collation of evidence from a number of pilot projects in the UK. The four tiers reflect the level of input required, firstly to identify or recognise personal and social harm and then to provide the social and psychological support necessary to facilitate behaviour change.

Consistent with figure 2a, Tier 1, ‘brief advice’ and tier 2, ‘brief interventions’ support the identification of health risks and the provision of self-management techniques to make changes. The difference between Tier 1 and 2 relates to the duration of the motivational interviewing component in supporting clients to recognise risks and in the provision of support for change. In essence Tier 1 is used as a precursor for change in those who were otherwise motivated but not aware or the risks, and as a pre-cursor for those who are psychologically or physically dependant to access tier 3 or 4 specialist interventions. Tier 2 interventions provide the opportunity to discuss these challenges to change and increase motivation. Tier 3 and 4 interventions provide the addition of more structured social support and pharmacological intervention to manage physical withdrawal from alcohol. Interventions at all Tiers are currently delivered face to face, however researchers are currently investigating the effectiveness of leaflets for the communication of risk information in comparison to healthcare professional advice for Tier 1 interventions (SIPS. 2009).

The behaviour change techniques in Tiers 1 & 2 of MoCAM include the identification of the level of drinking related risk together with brief advice about how to reduce that risk and referral to another specialist service (MoCAM, 2006). An extended version of the intervention for Tier 2 incorporates setting goals with patients and working within the FRAMES (feedback, responsibility, advice, menu, empathy and self-efficacy) principles of consultation between a health care professional and the client. Goal setting is a well-known technique for behaviour change (Michie et al 2009). Goals are a significant element for review against social factors and outcome expectancies (Carver & Scheider, 1972). Meta-analysis shows the FRAMES methods as effective for reduction of alcohol use specifically in non-treatment seeking users (Moyer et al. 2002).

Less resource intensive brief advice interventions to raise awareness of potential harm as a precursor to behaviour change, or to result directly in change are being considered in the UK. Some studies have highlighted

the potential effectiveness of verbal advice delivered face to face in addition to written information in achieving significant changes in drinking behaviour without the need for specialist services (Legare et al. 2009). A meta-analysis exploring the effectiveness of the delivery of this type of brief intervention for alcohol harm drop in primary care settings indicated a reduction in the average number of drinks per week compared to controls (Whitlock et al. 2002). Additional studies have also explored alcohol use at 6 and 12 months post a brief intervention and found significant reductions in consumption (Madras et al. 2009). The Institute of Psychiatry, Kings College UK, has launched a trial exploring the effectiveness of brief interventions delivered by Nurses and Doctors in a face to face context for raising awareness of the risks of alcohol consumption in comparison to information giving in leaflet format (SIPS. 2009). The results of this study are due to be published in 2010, and highlight an important shift in emphasis by examining the potential to reduce alcohol related harm through less resource intensive methods. If effective, there could be a shift in thinking about the potential to deliver brief interventions in a broad range of contexts including primary care settings, and places in which those engaging in excessive alcohol consumption may appear, for example, hospital Emergency Departments (Walton et al. 2008).

2.6.3 Weight management interventions

The number of people requiring support to lose weight, has reached epidemic levels and has led to extensive reviews of the efficacy of the interventions to support lifestyle changes (Buckland et al. 2008, Tsai et al. 2009, Wiffley et al. 2009). These reviews have repeatedly highlighted the importance of lifestyle intervention tailored to the needs of individuals in order to encourage the lower consumption of calories and an increase in physical activity (Healthy Weight, Healthy Lives. 2008).

NICE Clinical Guideline 43. Obesity identification, assessment and management (2006) suggest a tiered approach to intervention dependent on the extent of need, based on Body Mass Index (BMI) and co-

morbidities. All tiers are required to include core components of behaviour change which are nutrition and physical activity advice. The behaviour change minimum standard includes the following activity; goal setting, action planning and support with regulation of goals (including monitoring).

Unlike guidance for smoking cessation programmes, there is not a standardised programme for weight management. However, goal setting, self-regulation mechanisms and planning for overcoming barriers were each described important and regularly observed factors in successful weight management intervention studies (Hardeman et al. 2000; Michie et al. 2009). This has been supported by evidence from both individual face-to-face approaches and from behaviour change solutions delivered via the internet or mobile phone text messages (Neville. 2009). However, support with self-regulation for embedding changes is also a key requirement for effective weight management (Verheijden. 2005).

There is no standardised programme currently delivered in the UK, and so health care providers are developing bespoke support packages which include elements of the NICE guidelines. In response to a lack of standardised programmes, Michie et al (2009) conducted a meta-regression analysis, exploring interventions for healthy eating and physical activity and consequently made a call for closer attention to the detail of components of interventions to support change. The creation of such an evidence-base would in turn support the development of effective standardised programmes.

Due to large numbers of overweight people in the UK, with an estimated 24% obese in 2007 (Health and Social Care Information Centre. 2009), efforts to promote the initiation of weight management have included national advertising campaigns and support messages promoting the self-management of behaviour change. To this end a National Public Health Campaign branded Change4Life was launched in 2009. This incorporated a number of messages about healthy eating and the uptake of physical activity. The campaign comprised targeted messaging in the

form of media, television advertisements and posters. The campaign was aimed particularly at supporting changes in eating and physical activity in lower-socioeconomic groups in the population. The messages were targeted at these sub-groups and the healthcare professionals who are delivering healthcare. Public health initiatives, predominantly in the form of, individual-level, health promotion communications (e.g. health messaging) are dependent upon basic functional health literacy. Lower socio-economic groups are known to have lower health literacy (Nutbeam. 2000) and therefore this method of campaign is likely to have limited impact. The only evaluation of the campaign to date however, considered awareness amongst the population, and not the impact of the campaign on the initiation of change of lifestyle behaviours or mechanisms attributed to that impact (Healthy Weight, Healthy Lives, Change4Life Evaluation Strategy. 2008).

Other approaches have considered the impact of the delivery of brief advice on the uptake of specialist weight management services. These studies explore interventions for the uptake of weight management programmes (Counterweight Project Team. 2008; Forrest. 2007; Lavin et al. 2006; Muckle. 2007).They have consistently found significant increases in the uptake of these services following brief advice and the offer of referral from their primary health care professional.

2.7 The need for interventions to address multiple health risk behaviours

The impact of modifiable lifestyle behaviours on health outcomes is pronounced. Currently accounting for over 25% of the DALYs lost (Djousse et al. 2009) and up to a 14 year reduction in life expectancy in those engaging in multiple risky lifestyle behaviours (Poortinga, 2007).

Enhanced resource utilisation is now highlighted as central to the sustainability of interventions delivered by the NHS in England (Equality & Excellence: Liberating the NHS, DH. 2010) and other healthcare systems across the world (Annell & Williams. 2000). In developing services to tackle the reality of high rates of multiple risk behaviours, enhancement of

existing services is an attractive option. In addition, in order to achieve equitable outcomes, behaviour change interventions must optimise the public's contact with public services (Michie et al. 2008). Economic pressure on the NHS to demonstrate efficiencies in expenditure prevent any radical transformations in the way that services are delivered.

The aim of this research programme is thus to explore the feasibility of using an existing lifestyle intervention as a vehicle to deliver an intervention to support changes in multiple risk behaviours. As an initial step, two behaviours were chosen, these were smoking cessation and alcohol harm reduction. Smoking cessation services were chosen due to the availability of a standardised intervention programme, accessed by thousands each year. Alcohol harm reduction was chosen as evidence suggests that smokers are at risk of consuming dangerous levels of alcohol. A further review of these behaviours combined was therefore conducted.

2.8 Alcohol use in the smoking population

Smokers are estimated to be more than twice as likely to consume harmful levels of alcohol compared to non-smokers (Johnson & Jennison. 1992; Zancy. 1990; Dawson, 2000; Schroeder et al, 2002), with dependence on nicotine much higher in those who are alcohol dependent (Romberger & Grant. 2004) and thus many are at risk of harm from the physiological impacts of both smoking and alcohol consumption (Cunningham et al. 2006; Kodl et al. 2006). In addition each behaviour can impact on the motivation and agency to modify the other behaviour (Soejen & Bausell. 1989). The intake of alcohol is reported to reduce the rates of successful tobacco cessation behaviour (Breslau et al. 1996) and also to predict relapse in relation to tobacco smoking in those who have stopped smoking (Hyland et al. 2004; Baker et al. 2006).

Longitudinal research has indicated that hazardous levels of alcohol consumption (defined by frequency or volume of use) (Saunders et al. 1993) are predictive of relapse in tobacco smoking after a cessation attempt (Leeman et al. 2008). High rates of co-occurrence between

alcohol and smoking have consistently been found. A further study has highlighted the impact that any alcohol use in populations who were usually drinking harmful levels (defined by frequency and volume of use) has on increasing the risk of lapse in those attempting smoking cessation (Kahler et al. 2010). This relationship has also been found in the alcohol reduction research where tobacco use is found to have a negative impact on the patient's ability to reduce alcohol consumption (Aalto & Sillanukee. 2000). A study exploring the effects of a single issue brief intervention for alcohol have found no secondary effects relating to smoking (McCambridge & Jenkins. 2008) Despite the need to further understand and address the combined effect of these behaviours. Interventions have not been developed to support changes in both alcohol use and smoking.

Having established the need to promote change in multiple health risk behaviours, the next section of the thesis reviews additional relevant theory and evidence to inform the detail of the emerging research programme.

Chapter 3.

Multiple Lifestyle Behaviour Change: Review of Relevant Theory & Evidence

3.1 Introduction

The review of behaviour change services in the UK outlined in Chapter 1 describes the current 'silo' approach to supporting change in single behaviours. As significant numbers of people engage in more than one risky lifestyle behaviour and as resource constraints are considerable, the possibility of enhancing existing services to address more than single behaviours is an attractive route to achieving gains in both health outcomes and in the efficiency of NHS services. However, in order to progress this as a possible development in behaviour change services, it is essential to consider similarities and differences in the components of existing single-behaviour change programmes and in the attitudes and beliefs of the health care professionals involved in the delivery of these interventions. These components have been notably absent in previous intervention design (Annell & Wiliams. 2000).

This chapter will provide a review of theory and evidence relevant to the potential for an enhanced behaviour change package for clients with multiple risk behaviours. Section 3.2 examines the content of current interventions and the similarities and differences in behaviour change techniques employed to address different LRBs. Section 3.3 outlines the theoretical basis for the techniques employed. Section 3.4 explores the need to establish 'buy in' from HCPs for the concept of interventions to address more than one LRB in one intervention programme. Finally, Section 3.5 summaries the implications of this review for the current research programme.

3.2 Similarities and differences in the behaviour change techniques used in current single-behaviour interventions

NICE Public Health Guidance (6) for behaviour change interventions (2007) emphasised the lack of an explicit evidence base to guide the precise content and delivery of interventions designed to promote

changes in health risk behaviour. The Guidance outlines the importance of theory driven interventions, incorporating a clear description of evidence based intervention components to support effective changes in behaviour. The Theory of Planed Behaviour (Ajzen. 1991) incorporates attitude and subjective norms, alongside perceived control and self-efficacy (Bandura. 1997). These elements are reported to underpin both intention and sustainable change. The NICE Guidance further outlines the importance of considering risk taking behaviours (smoking and alcohol use) as coping mechanisms in response to stress (Lazarus. 1976) and highlights the importance of addressing this in interventions, in addition to the role of habits and familiar routine in human behaviours (Bourdieu. 1977).

There are a number of disease specific programmes i.e. for diabetes or cardiovascular prevention, which offer intervention for a number of lifestyle behaviours. However, they show limited success and fail to define techniques which facilitate more than one change (NICE. 2007). The majority of studies exploring the effectiveness of these programmes are limited to self-management education interventions (i.e. Jarvis et al. 2009). Furthermore the need for a specialist trained workforce is referred to throughout these studies (Abetz et al. 2007) with little reference as to what this training involves and the rationale for its use. To date guidance for addressing more than one change has alluded to undefined terms such as ‘high intensity counselling’ and principles such as the 5 A’s which support communication with a patient, but provide no understanding of the mechanisms which underpin this change (Goldstein et al. 2004). One relatively recent approach to behaviour change in the UK worked on the basis that effective techniques in promoting change were common across several of the common risk behaviours, including smoking, alcohol consumption, dietary intake and exercise. The NHS Health Trainer programme, launched in the UK in 2008 (Michie et al. 2008) was underpinned by self-regulation theory, and techniques based on other SCMs, including evidence relating to the benefits of boosting self-efficacy. It addresses the importance of identifying and challenging normative

beliefs, creating discrepancy and enhancing confidence to engage in change. The evaluation of the programme is underway. Whilst the Health Trainer Programme offers promise across a range of behaviours, the mainstream interventions offered in the UK remain focussed on single behaviour change issues.

The NICE Guidance (2007) strongly recommends more robust evaluation of interventions in practice to identify how and why they are effective and to identify critical points for engagement in initiation of change and behaviour change, but does not address the issue of multiple LRBs.

In addition to reviewing the evidence for specific techniques, the Guidance also outlines an evidence base which highlights that brief advice delivered by a healthcare professional is a suitable method of supporting uptake of specialist behaviour change services and that this is more effective than traditional health promotion techniques. To extend this, the common characteristics of an effective brief intervention have been identified as advice provided by a health care professional together with motivational interviewing techniques to encourage action. However, a drawback of these studies to date has been the absence of clear identification of the specific motivational interviewing techniques which facilitate the initiation of change and clear distinction as to which approach should be adopted.

3.3 Theoretical basis for the behaviour change techniques employed in current interventions

Several psychological theories support the understanding of changes in behaviour. The Social Cognitive Models (SCMs) are the most commonly applied in the study of lifestyle behaviour change (Michie et al. 2008; Anderson et al. 2010; Clark et al. 1990). The most frequently used SCMs include the Social Learning Theory (SLT) (Bandura. 1977), the Theory of Planned Behaviour (TPB) (Ajzen. 1991) and the Self-Regulation Theory (SRT) (Carver & Scheider. 1998).

The SLT (Bandura. 1977), outlines two components as central to change, firstly, outcome expectancies and perceptions of ‘agency’ and secondly,

self-efficacy to engage in changes. The expected outcomes of continuing with or making changes in behaviour, includes expectations of both affect (this is the impact on how the individual will feel), and external outcomes, (such as social approval or changes in physical state). There are specific techniques which address these areas, e.g. modelling and role models to increase positive anticipated social outcomes and action planning, goal setting and self-monitoring to encourage anticipation and review outcomes. These techniques reinforce sustained action following changes in expectations of outcome and in the ability to achieve goals.

The Theory of Planned Behaviour (TPB) (Ajzen. 1991) comprises three core components which are important for the formation of both intention to change and subsequent behaviour change. These include; attitude, perceived behavioural control and normative influences. Attitudes may be addressed by comparative discussion using motivational interviewing techniques. Normative influences may be further addressed with the use of communication skills training to support discussions to remove social challenges (Fishbein, & Cappella. 2006) e.g. the introduction of a smoking ban in a home with other smokers.

The Self-Regulation Theory (SRT) (Carver & Scheider. 1998) is characterised by a recognised discrepancy between current and desired behaviour, and the continuous review of this discrepancy and the confidence (self-efficacy) to maintain engagement in the required changes. The effectiveness of this approach has been recognised in meta analysis of healthy eating (Michie et al. 2009).

Although the behaviour change literature offers relatively little to an understanding of multiple behaviour change, the management of long term conditions, for example diabetes and CHD requires changes to multiple lifestyle behaviours in order to enhance health outcomes (Wing et al. 2001, Williams et al. 2003). Successful management often requires a combination of behavioural, physiological and pharmacological interventions. The theoretical framework most commonly used in the management of long term conditions is the Trans Theoretical Model of

Change (TTM) (Prochaska & DiClemente. 1983; Prochaska & Velicer. 1997), with specific techniques derived from the SCMs outlined above being employed according to the client's stage of readiness for change. The TTM has been widely criticised in relation to its ability to drive the content and focus of interventions and its lack of testability, however the concept of readiness to change has attracted wide acceptance (West, 2006).

The common components are reflected in the importance of successes or positive outcomes in comparison to expectations, desires and social factors. These elements combined are understood to enhance self-efficacy leading to positive changes. This is believed to enrich self-efficacy for further change, outlined by Bandura as the effect of 'mastery'. The core component, self-efficacy is represented throughout all of the SCM's and most other relevant studies (Bandura. 1998). Bandura's Social Learning Theory (SLT) identified mastery, effective change or acquisition of skill, as predictive of enhanced self-efficacy. In 2008 Michie et al. (2008) conducted a review of research to identify techniques which could enhance self-efficacy following intention formation for self-regulation of change. This has implications for the potential of achievement of more than one behaviour change in the design of interventions.

The British Psychological Society conducted an extensive review in order to examine the potential of developing behaviour change interventions to underpin the majority of the major LRBs (Michie et al. 2008). The literature review provided an overview of physical activity and healthy eating interventions. The findings highlight the common use and effectiveness of goal setting and monitoring on behavioural (reduced calorie intake and increased physical activity) and physical outcomes (weight loss). Although there is a noteworthy lack of literature in relation to alcohol harm reduction interventions, the evidence suggests that shared methods for the regulation of behaviour change may be effective.

Michie et al (2008) have indicated that there are substantial gaps in understanding about the detail of both theoretical drivers and the specifics of the components of effective interventions. However, despite these gaps in understanding, research has repeatedly identified the key role of self-efficacy in successful behaviour change. This variable may also be crucial in the development of interventions to address more than one behaviour, as success in changing one behaviour may then increase the likelihood of actively engaging in change of a second. If this were the case, a sequential stepped approach may be the most logical development, (Dunn et al. 2001) including a focus on one behaviour at the beginning of a programme, and moving to address a second behaviour once change has been successfully initiated and self-efficacy enhanced.

To date, theories in health psychology have offered little understanding of the processes underpinning the co-existence of multiple risk behaviours. However, the theories do imply commonality in the psychological processes underpinning different health-risk behaviours and therefore would support the potential to tackle change in more than one behaviour in a single intervention.

3.4 Multiple behaviour change: The need for 'buy in' from health care professionals

In order for change in existing services to take place, achieving 'buy in' from health care professionals is likely to be critical particularly those involved in delivering current programmes. This aspect of change is frequently neglected. Kazdin (2003) for example, estimated that only 3% of psychological interventions consider the impact of the processes needed for changes in health care professional practice. Vogt et al (2008) reported that despite receiving training in motivational interviewing relevant to the delivery of brief advice designed to promote uptake of specialist behaviour change services, healthcare professionals reported a lack of belief in the efficacy of behaviour change interventions, and were therefore less likely to offer the brief advice. Studies of the effectiveness

or otherwise of long term condition management programmes have identified the lack of a perceived link between the objective of their contact with the patient and the behaviour change intervention required as a key barrier to the implementation of behaviour change intervention by healthcare professionals (Thomson et al. 1995; McAvoy et al. 1999). Ampt et al (2009) conducted a study of brief advice for promoting 'physical activity' to be delivered by primary care clinicians. The study identified two main reasons for the clinicians failing to deliver the brief advice to engage in behaviour change interventions in their practice. These were firstly the clinicians' beliefs about the perceived locus of control of their patients, (defined as the extent to which the potential or lack of potential for changes in behaviour were perceived by clinicians to be controlled by environmental factors), and secondly, the clinicians' perceptions of the patient's ability to make any changes. In a similar vein, when outlining Self-Determination Theory, Deci et al (1985), highlighted the importance of personal values of directing the practitioner's behaviours in the context of their professional practice. A process of consultation to ascertain the beliefs and attitudes of any HCPs involved in delivering a new programme therefore appears crucial in planning changes to current services, as is the development of appropriate training for those delivering an enhanced intervention.

Michie et al (2008) developed a comprehensive framework which included domains which have been identified as effecting changes in healthcare professional behaviours. This was achieved following a review of psychology theories resulting in a framework for theoretical precursors for changes in practice. Michie's framework defined 12 domains of change, including personal and interpersonal factors, attitude, self-regulation, emotion, memory and outcome expectancies of behaviours and organisational domains including supporting systems.

Sustainable changes are likely to be dependent on the clarity of the role of the healthcare professional and by reassurance that their input was of benefit to the patient. Parle et al's (1997) Model of Healthcare

Professional Communication, highlights the importance of these outcome expectancies and self-efficacy in addition to skills and knowledge.

The Counterweight Project Team (2008) is an excellent example of a consideration of personnel, systems and intervention required for effective implementation. This study of weight management interventions involved the healthcare professionals delivering the intervention in the design of the implementation plan. This demonstrated a significant increase in both uptake of the intervention by healthcare professionals and improvements in subsequent patient outcomes.

3.5 Implications of the review of theories, components of behaviour change interventions and the potential for multiple risk behaviour approaches

The theories underpinning current behaviour change techniques imply that the factors and processes involved are common to most, if not all health related behaviours, lending support to the potential for an intervention to address multiple behaviours. Self-efficacy as a key construct in successful behaviour change lends support for the potential of a stepped approach in which a client is encouraged to achieve change in one health behaviour, and then to use the increase in self-efficacy as a spring board to initiate change in a second behaviour. The review of previous research reported in this chapter has also highlighted that achieving buy in from the health care professionals involved in the delivery of an intervention is crucial.

Bradley et al (1999) made a call for the development and evaluation of complex interventions in health service research. Hardeman et al (2002) suggested that the study of complex interventions should include qualitative and quantitative methods to enable a clear understanding of the relationship between each element of the intervention design, implementation and outcomes. This model informed the study design as outlined in Appendix 1.

3.6 Summary of the study objectives for addressing behaviour change in relation to smoking and alcohol

The literature reviews contributed to the formulation of the overarching initial aim of this research project, namely

a) to examine the feasibility of addressing more than one behaviour change during one episode of contact with a behaviour change service.

The outlined theories and research and intervention design frameworks support the following two aims

b) to explore the role of self-efficacy and outcome expectancies in the process of multiple behaviour change and

c) to understand the role of the beliefs and perceptions of health professionals in this process

Objective 1 To identify psychological components involved in engagement in more than one lifestyle risk taking behaviour (alcohol and smoking). To achieve this objective, Study 1 was broken down into four sub-sections.

a. To understand the extent of engagement in a second risk taking lifestyle (alcohol misuse) behaviour in users of an established lifestyle behaviour change (smoking cessation) service.

b. To establish if those engaging in alcohol and smoking risk behaviours have different levels of success in behaviour change compared to those users not engaged in alcohol risk behaviour.

c. To establish if the psychological component of self-efficacy is increased after success in changing one behaviour.

d. To establish if an increase in self-efficacy is related to success in changing a secondary behaviour.

Aims 1 and 2 are addressed in Chapter 6 as Study 1.

Aim 3 is addressed in the preliminary preparatory work for Study 1 (outlined in Chapter 5) and in Chapter 7 through Study 2.

The following Chapter (5) describes the groundwork undertaken prior to the implementation of Studies 1 and 2.

Chapter. 4.

Preparatory Work: Engaging Stakeholders & Refining Research Plans

As discussed in Chapter 3, the engagement of those involved in the delivery of behaviour change interventions has been recognised as key to successful implementation (Counterweight Project Team, 2002). Thus, this chapter outlines the preparatory work undertaken in this respect, including discussions with the relevant senior managers and with the practitioners delivering the existing Stop Smoking Service (SSS) chosen as a vehicle for the enhanced intervention. The impact of these discussions in the development of the methods for the research programme are outlined. In addition, the existing programme used by the SSS was studied in detail in order to consider how best to implement the additional intervention, to identify any system barriers to the incorporation of an additional intervention to establish the training needs of the SSS trainers in relation to the delivery of this additional intervention. This was achieved by discussions with the senior manager about the process of delivery and eliciting further information on the format of the sessions through discussions with the SSS practitioners.

4.1 Recruitment of the Stop Smoking Service

As an initial step in developing the detail of the research programme, the Tobacco Control Manager (TCM) and the Research and Development Lead for the South London Stop Smoking Services were approached in relation to the proposition of studying the feasibility of including an alcohol harm reduction brief intervention as a component of the existing SSS. Both parties welcomed the research study within their organisation.

In the meeting with the TCM, the existing training of the SSS staff was reviewed to assess the suitability of their existing competencies in relation to the delivery of an additional intervention. It was concluded that the team received no training for alcohol harm reduction, but did receive some training on the impact of alcohol on relapse risk for smoking.

In addition, the protocol in relation to all stages of the clients' journey through the SSS was discussed with the TCM, including the detail of initial referral, pre-programme assessment, the format and timing of interactions with advisors and follow-up. This enabled a consideration of the most appropriate method of incorporating the additional intervention, of recruiting participants to the study and of protocols for post-intervention follow-up. The normal flow of clients through the local services was also explored to review the feasibility of conducting a longitudinal repeated measures study with sufficient power within the permitted timescales. On the basis of attendance figures from 2008/09 (the year prior to this study), attendance figures for the proposed study period (July 2009 to July 2010) were estimated and considered sufficient for the purposes of this study.

Finally, and in line with the British Psychological Society's guidance for the development of interventions (2009), the TCM and the researcher discussed the current training and the competencies of the Stop Smoking Service practitioners. The TCM outlined two formats for delivery of the 6 week SSS programme-one to one (delivered by 90 pharmacists and practice nurses across primary care trusts) and the group programme run by 8 trained practitioners with a variety of backgrounds including training in health promotion, medicine and professions allied with medicine. In discussion the TCM and the researcher agreed that the practitioners with a minimum of 12 months experience of delivering the group programmes would have competencies appropriate for the inclusion of an additional intervention. In addition, there was no preliminary preparatory contact between the client and the practitioner in the one-to-one service, precluding the possibility of obtaining prior consent from clients to an additional intervention. The decision was thus made to focus on the recruitment and training of practitioners delivering the group programmes. The researcher subsequently conducted an assessment of the additional training needs of these practitioners (see 4a below).

The group programmes were run according to the NHS Gold Standard SSS group programme. A typical programme was delivered to between 5-20 service users in one hour sessions, once weekly for six weeks. The

programme included behaviour change support and nicotine replacement therapy. Programmes were facilitated by two trained stop smoking practitioners each week. The first session was a preparatory session which included setting a date to stop smoking and a discussion of barriers and facilitators to change. From the second session onwards patients were encouraged to stop smoking. The remaining four sessions were used to support smokers through tobacco abstinence (for outline of the programme, see Table 4a).

Table 4a Outline of the Stop Smoking Service Programme

Week	***Outline of session content***
1	Review motivations for stopping smoking Provide information on pharmacological aids Set quit date Support planning for coping strategies Biochemical (baseline) C0 reading
2	Quit date Support with goal setting for planned action Support with strategies to overcome identified barriers and rewards for achievements
3-5	Biochemical feedback Reinforce positive changes Explore challenges and plan to overcome barriers
6	Biochemical feedback Reinforce positive changes Explore challenges and plan to overcome barriers Relapse prevention

The client journey from access to completion of the programme comprised the following eight steps:

1. Access to the service. The service was accessed by referral by the GP or self-referral via telephone helpline.

2. At least one week prior to the start of the programme patients were booked into the group via telephone.

3. Following booking onto the stop smoking programme patients were sent preliminary information. This included a patient file

which they were asked to consider and complete prior to their first appointment.

4. Patients attended the first session of the stop smoking service programme where they deposited their patient file and provided a carbon monoxide reading. This was achieved by expelling breath into a hand held monitor. Results of this test were immediately available.

5. Patients attended weekly stop smoking service group meetings where they provided a carbon monoxide reading during each session.

6. Patient files were updated weekly with carbon monoxide readings and self-report smoking status.

7. Patients were followed up at 4 weeks and 6 months following completion of the programme to attain details of sustained smoking cessation.

8. All Patient files were stored electronically on a password protected secure NHS database and hard copies stored in a locked drawer for 5 years.

During each contact with the service, users provided a self-reported smoking status and a carbon monoxide reading. There were no psychological measures within the routine SSS assessment. The TCM agreed that it would be feasible during the final session of the stop smoking programme for users to be screened in relation to their alcohol use and to be offered a brief intervention focussing on alcohol harm reduction. The TCM and researcher further agreed that the focus of the research programme would be on ‘standard’ SSS group programmes, rather than on those developed for specialist populations such as prisoners and young offenders, mental health service users and young people groups.

The TCM also discussed with the researcher the proposed materials to support the research programme, including the proposed e-learning package relating to the delivery of brief advice relating to alcohol use (see detail below), the content of patient information sheets, questionnaire packs and consent forms.

These materials were then reviewed by the stop smoking practitioners during a regular in-house team meeting. There were no changes made to the materials following this consultation. Practitioners were enthusiastic about participating in the study reporting a gap in their knowledge about alcohol as a challenge to supporting their patients with cessation and relapse prevention. The TCM and the majority (n=6, 75%) practitioners, emphasised the importance of minimising any adverse effects of the proposed study on attendance at the SSS, thus asked that the voluntary nature of the participating in alcohol screening be made very clear in the Patient Information Sheet. As the information about how to reduce the harm caused by alcohol was recognised as an important relapse prevention strategy there was no such requirement for voluntary participation in receipt of the information about alcohol harm minimisation. Following this consultation, the methods and materials were signed off by the TCM and were approved by the Research Governance Lead at UWE (Appendix 2) before submitted to the Research and Development Team at the Primary Care Trust in May 2009 (Appendix 3).

The TCM introduced the approved research programme to the South London SSS practitioners in February 2010. The TCM outlined the purpose of the intervention and the requirements of the practitioners should they decide to participate. All eight advisors (100%) agreed to participate in the programme.

As a final stage of the recruitment process, the researcher held a briefing meeting with all SSS practitioners to outline the detail of the research programme and to answer any queries. Practitioners were introduced to the aims and objectives and were given detailed information sheet (Appendix 4). Practitioners were reassured that there was no requirement

to participate and that non-participation would not affect their work as a stop smoking practitioner for the Trust. All practitioners currently delivering the SSS programmes were considered eligible to volunteer to include the additional intervention. All eligible practitioners who expressed an interest to participate were asked to complete an informed consent proforma (see Appendix 5). This consent outlined their ability to withdraw from the study at any time without any consequences to their employment.

4.2 Training participating practitioners

As discussed above, training materials underpinning the delivery of brief advice to promote alcohol harm reduction was available in the form of the e-learning tool 'Identification and Brief Advice for Alcohol' (IBA) developed by the Alcohol Learning Centre as recommended in the National Guidance MoCAM. The practitioners volunteering for the study each undertook an online e-learning programme for alcohol harm reduction brief advice training at a time of their own choosing within the constraints of the study timeline. The e-learning tool was a publicly available programme accessed on an online website at:

www.alcohollearningcentre.org.uk/alcoholeLearning/learning/IBA/ALC_IBA/ (accessed January 2009-August 2010). The tool had been accredited by the Royal College of Nurses and the Royal College of General Practitioners and comprised information on; safe drinking limits, screening tools and motivational interviewing techniques. Knowledge acquisition was assessed by multiple questions in four sections:

i) Understanding units and categories of harm (no/low risk, increasing risk, higher risk drinking).

ii) Introduction to identification tools.

iii) How to use identification tools.

iv) How to give brief advice.

The training took around 1 hour to complete. A pass mark of >80% was required to enable participation in the study.

In discussion with the TCM and at a meeting with the SS Practitioners, some concerns were expressed about their lack of knowledge amongst the stop smoking specialists about local alcohol services, what they offer and how to access them. Therefore the IBA training was supplemented with the development of a guide about referring participants to alcohol-related services in the areas local to the SSS and a programme of support sessions delivered by the researcher to support practitioners about when and how to deliver the brief advice.

4.3 Development of a guide relating to referral to local alcohol support services

The healthcare services which participated in the study shared common geographical boundaries with the Drug and Alcohol Teams (DAAT) and the alcohol treatment services. Alcohol services were identified and referral pathways to access these services were developed. These pathways were produced in formats that could be used by practitioners in supporting their patients to access specialist alcohol advice and treatment services if required.

4.4 Support and supervision sessions for practitioners

Following discussion with the TCM and SSS Practitioners, the training programme was also supported by an individual programme of support and supervision offered to practitioners by the researcher. This comprised two sessions (one delivered face to face, prior to the IBA training; one after training, conducted by telephone) in which the detail of the delivery of the brief advice was given and quality checks undertaken (in the form of checking the accreditation certificate for successful completion of the IBA training). These sessions were also designed to optimise similarity in the content, duration and context of the alcohol brief advice interventions that were offered across the various SSS in order to enhance the replicability if the intervention in the future (Webb & Sheeran, 2006) see Table 4b.

Table 4b. Supervision Plan: Delivery of identification and brief advice for alcohol harm reduction during stop smoking group programmes

Supervision	***Actions completed in each session***
Session 1 – ***Pre IBA Training*** ***Time:*** *10 – 15 minutes* ***Setting:*** *Advisors Office*	Prior to the online Identification and Brief Advice (IBA) Training Programme, meet with Stop Smoking Advisor. <u>Actions</u> 1. Outline the purpose or delivery of IBA and supervision plan 2. Discuss advisors experience, capacity and capability (as outlined in Needs Assessment) 3. The format of delivery (last session of programme), expected time required to deliver advice (2 minutes 1-1 when smoker arrives at the clinic immediately after C0 monitoring. 5 minutes discussion at the end of the stop smoking programme but allow 10 minutes in case of smokers wishing to discuss in detail). 4. Brief description of content of IBA training. 5. Answer any questions or queries 6. Introduce the website to access the learning tool 7. Provide the intervention training web address and contact details 8. Confirm supervision session 2 when the test has been completed (advisor to have IBA Pass certificate)
Session 2 – ***Post IBA Training*** ***Time:*** *10 – 15 minutes* ***Setting:*** *Telephone*	Following successful completion of the IBA training telephone advisor <u>Actions</u> 1. Go through the detail in the Client Participation Sheet. 2. Re-affirm the practitioners role and responsibilities 3. Discuss the referral pathway(s) for the referral to alcohol treatment services and the screening scores indicative of the need for treatment 4. Answer and questions or queries 5. Confirm date of the first session 6 of the programme for delivery for IBA 6. Re-affirm contact details and invite to contact if any queries

4.5 Site risk assessment

The study involved four different sites within two NHS primary care geographical areas. The University of the West of England site risk assessments were completed and approved for each venue prior to the study initiation (Appendix 6). The assessment identified low level psychological risk for participating clients including; anxiety, anger or upset, (which may be caused by raising the issue of alcohol consumption in the context of a smoking intervention). Risks associated with the completion of psychological questionnaires were considered to be low. The control measures in place to mitigate against these risks included confirming that i) practitioners had prior training in basic counselling skills and ii) that client participation in the study was optional and that this was made clear throughout the research programme.

4.6 Governance and ethics approvals

As the study included NHS patient and staff populations, approvals were gained from the London Surrey Borders NHS Research Ethics Committee (Appendix 7) and the NHS Richmond and Twickenham Research

Governance (Appendix 8). Extensive delays were experienced in achieving Research Governance Approvals. The first submission was made to the Research Governance Teams in May 2009; the NREC approved the study in September 2009. Due to the volume of applications to the R&D Team approval for the study was not granted until December 2009.

4.7 Summary of the preparatory work to underpin the feasibility studies

Discussions with the senior manager responsible for the SSS and with the SS Practitioners confirmed the enthusiasm of staff for studies to assess the feasibility of enhancing the existing SSS to include brief advice aimed at encouraging clients at risk of alcohol-related harm to seek specialist support to achieve a further behaviour change. Preparatory assessments confirmed the possibility of conducting a longitudinal repeated measures quantitative design with the target population of stop smoking service users during the proposed timescale for the study.

Within the SSS client pathway it would be possible to recruit service users at least one week in advance of the first treatment session. In addition, levels of success in smoking cessation could be assessed using objective as well as subjective measures, recorded weekly.

The SSS Practitioners delivering group programmes were confirmed as having the necessary experience and competence to complete the online training for Identification and Brief Advice for Alcohol Harm Reduction and all completed this training to the necessary standard. The requirement for SSS practitioners to have knowledge of alcohol treatment services was addressed through the development of additional guidance and a supervision support plan. The supervision also allowed the researcher to engage in the important task of ‘winning the hearts and minds’ of the practitioners in relation to the potential benefits of incorporating alcohol brief advice into the existing Stop Smoking Service. Practitioners were enthusiastic about the potential of the proposed study as an investigation of the feasibility of delivering intervention to address more than one health-risk behaviour. They were interested in the content of the online training, with most reporting surprise about the relatively small amount of alcohol which was considered to be of risk to health. This

information was reported as interesting and useful. All discussed some concerns about how to raise the subject of alcohol consumption with their clients, particularly in relation to potentially alienating service users by including an additional component in the intervention. They also expressed practical concerns about how they could fit the alcohol reduction advice into the existing programme. These concerns were discussed and hints and tips offered to address particular issues. All, advisors reported their motivation to engage in the research study and were positive about the experience of doing this going forward.

Chapter 5

Study 1. Implementing an intervention to promote behaviour change in more than one lifestyle risk taking behaviour.

5.1. Overview: The research reviews and design considerations

The literature reviews reported in previous chapters identified the prevalence of multiple health risk behaviours in the general population, and pointed to the relevance of smoking and alcohol consumption as the initial focus for intervention. Study 1 was designed to address the objective of identifying psychological components involved in both engagement and changes in more than one lifestyle risk taking behaviour (alcohol and smoking). This objective had four sub-sections.

a. To understand the extent of engagement in a second risk taking lifestyle (harmful/hazardous/dependant alcohol misuse) behaviour in users of an established lifestyle behaviour change (smoking cessation) service.

b. To establish if those engaging in alcohol and smoking risk behaviours have different levels of success in behaviour change compared to those users not engaged in alcohol risk behaviour.

c. To establish if the psychological component (self-efficacy) is increased following a change in behaviour (stopping smoking).

d. To understand if an increase in self-efficacy in relation to change in a first behaviour (smoking) influences psychological components for other behaviours (alcohol related self-efficacy and outcome expectancies) and subsequent further behaviour change (alcohol use).

The importance of self-efficacy in the theoretical basis and design of interventions for behaviour change was identified in the literature review reported in Chapter 3. In addition, Social Learning Theory highlighted the key role of 'mastery', an enhanced self-efficacy following a successful change in behaviour, which appeared particularly relevant to achieving change in more than one health risk behaviour. In order to ensure clarity in

relation to the components of an intervention, an existing Tier 3 intervention (the stop smoking service) was combined with an existing Tier 1 focussing on alcohol consumption. The alcohol brief intervention was designed to increase knowledge of risks and 'negative outcome expectancies', and to signpost users to appropriate services. The intention was for practitioners to deliver this intervention as part of the final session of the Stop Smoking Service programme.

5.2 Methods

5.2.1 Study design

The study was designed as a repeated measures longitudinal quantitative study. Originally, it was planned to collect data from participants over a nine month date period. This included the administration of all measures at baseline (enrolment in the SS group programme), at the completion of the SS programme and prior to the delivery of the brief advice alcohol intervention (week 6), and at 4 weeks and 6 months follow-up.

5.2.2 Sample size calculations

An independent statistician calculated the sample size required to answer research questions c & d, using a hierarchal logistic regression. The success rate of the alcohol intervention (as assessed by the UWE statistician) was estimated as 25%-75% (Peduzzi, el al. 1996). A power calculation indicated that the minimum sample size of completed datasets should be 240. This calculation did not overly inflate Type 1 error rates (Appendix 9). The sample size was considered achievable, as the original timeline for the study would allow for recruitment of 700 participants. A recruitment target of 500 permitted a generous allowance for the attrition and non-completion rate of 50% considered 'usual' for the SSS (as indicated by the TCM and quoted by Fergusson et al. 2005).

5.2.3 Plan for statistical analyses

A statistical analysis plan to address the Study was developed as follows:

a) Descriptive analyses would be conducted to identify levels of alcohol use in users of the Stop Smoking Programme.

b) Chi Squared analysis would be used to establish if there were statistically significant differences in quitting smoking between different categories of alcohol use. Analysis would include categorical AUDIT (Alcohol Use Disorder Identification Tool) scores collected at baseline and quitting success at completion of the treatment programme.

c) T-tests were planned to explore AUDIT scores at programme commencement and completion in order to evaluate changes in alcohol use throughout the programme.

d) A repeated measures ANOVA would be used to explore changes in alcohol consumption and psychological components (outcome expectancies and self-efficacy) following the alcohol brief advice intervention.

Analyses would be controlled for nicotine dependence, previous quit attempts, and demographics including gender.

e) A Hierarchal Logistic Regression analysis was planned to examine the influence of social cognitive components and successful quitting smoking behaviour. This would consider change in alcohol use and changes in self-efficacy and outcome expectancies.

f) ANCOVA would be used to explore any changes in variables over time, accounting for any confounding influences including physical dependence and past behaviour.

5.3 Change to the study design resulting from delays in the approval process

Despite the researcher's best efforts, there was a delay of 9 months in the process of achieving approvals from the Research and Development (R&D) Team, significantly reducing the time available to conduct the study. The Research and Development Team reported the reasons for the delay to be the result of an unexpected volume of applications.

However, as the service used in the study is hosted by one Primary Care Trust, but delivered across two Primary Care Trust organisations, it is likely that the delays resulted from uncertainty as to how to appropriately manage the processing of the application. As the study was being conducted as a component of the taught Practitioner in Health Psychology Doctorate, it was not possible to extend the study period due to constraints in the time permitted for submission. It became evident that the scope of the study would need to be reduced dramatically. In the event, only 4 SSS group programmes were run during the period of study.

In addition, during this period of delay, the SSS modified their registration procedures. By the time approvals were in place, the service no longer sent information packs to prospective attendees prior to the start of the SS programme. The SSS practioners decided not to send prospective participants the study questionnaires ahead of the first attendance at the SSS as they were concerned that this may reduce attendance to the SSS. Thus the opportunity for potential participants to receive the Patient Information Sheet (PIS) and consent form prior to attendance at the programme had been removed. Prior to the delay imposed by the R&D approval process, the clients' demographic details had been collected during a dedicated slot at the beginning of the first SS session, however, by the time approvals were in place, this procedure had also been 'streamlined', with demographic information collected electronically via stored files. Thus the opportunity to recruit potential participants and for them to complete the study questionnaires as limited to a very brief slot prior to the start of the first SS group session.

5.3.1 Participants

As the study was exploring the process of one behaviour change (smoking cessation) and the relationship with further lifestyle behaviour change, (alcohol harm reduction), an availability sample of patients using the group based programme delivered by two London based Stop Smoking Services were asked to participate.

5.3.2 Materials

Study information sheets and consent proformas

A patient information sheet (PIS) comprising information about the purpose of the study was developed after preparatory discussions with staff involved in the delivery of the SSS (see Chapter 4). This included details of the purpose of the study procedure, the voluntary nature of participation that the treatment offered by the NHS SSS would not be affected in any way by refusal to participate in the study and the contact details of the researcher. The opportunity to complete the questionnaires over the telephone was also offered as an option (see Appendix 10). Patients were also asked to complete a consent form (Appendix 11), confirming participation in the study and permitting the extraction of data from NHS their stop smoking client files.

Questionnaire packs

Questionnaire packs were to be administered at baseline, 4 weeks and 6 months post completion of the SSS programme. The questionnaires were available in large print. Participants were also advised of the option to call the SSS free phone number and speak to a practioner who would contact the researcher should participants require the questionnaire to be administered over the telephone.

Measures included the following:

<u>Demographic Information</u>

The researcher was given access to the demographic data routinely collected as part of the SSS. These data included, gender, age, ethnicity and employment status (paid employment, unemployed, retired, homemaker, student or permanently sick and disabled). The data were anonymised through the allocation of a Patient Identification Number (PID) to enable simple linking of the demographic and questionnaire data for analysis purposes.

Nicotine Dependence

The Fagestrom Test for Nicotine Dependence (FTND) is a recognised measure for nicotine dependence (Heatherton et al. 1991) and is routinely collected as part of the SSS. The measure includes 6-items each assessing indicators of psychological dependence. This included for example: '*How soon after waking up do you have your first cigarette?'* a) Within 5 minutes b) 6-30 minutes c) more than 30 minutes (Scored a=3, b=2, c=0). All item scores were summed to produce an outcome measure dependency score 0-10 (Heatherton et al. categorise (6-10) high dependence and (1-5) low dependence). Previous studies recommended that accuracy may be enhanced by considering dependence on a continuum (Tiffany et al. 2004; Wellman et al. 2006). It was intended to use the continuum approach in this study.

Previous Quit Attempts

Previous quit attempts and longest period of abstinence were measured using a single item reporting number as outlined by Moan & Rise (2005). This was measured at baseline.

Alcohol Use

The Alcohol Use Disorders Identification Tool (AUDIT), self-report version was adopted. The AUDIT is the Department of Health Gold Standard screening tool for consumption and risk of alcohol harm (MoCAM. 2008). The tool was developed as part of the World Health Organisation (WHO) collaborative. The original questionnaire comprised 150 items, 10 of which were selected as the only questionnaire of this type to be valid across six different countries and cultures. This is a validated 10-item questionnaire (Saunders et al. 1993) (Cronbach's Alpha 0.81). Questions explore levels of engagement in alcohol consumption considered to pose a risk to health, e.g. 'How often do you have six drinks or more on one occasion?' Responses to each item were reported on frequency of activity on 4 and 5-point scales, e.g. never, monthly, weekly, daily, almost daily. Responses for each item were scored 0-4 and summed to classify

drinking behaviour in relation to level of risk. A score of 0-7 is taken to represent a low level of risk, 8-15 represents a hazardous level, 16-19 represents harmful and 20+ is classified as representing 'possible dependence'.

Intentions in relation to smoking

A single item measure of intention to stop smoking was included. Responses were recorded on a likert scale 1(strongly disagree) to 10 (strongly agree) in response to the statement, 'I intend to not smoke at all this week'. For analysis, results were categorised as low intention (score 1-5) or high intention (6 – 10).

Intentions in relation to Alcohol Consumption

A single item measure of intention to drink safe levels of alcohol was adopted for the follow up questionnaire. A single item measure had demonstrated reliable prediction of behaviour at 6 months in previous study (Williams et al. 2007). Responses were recorded on a Likert scale, 1 (strongly disagree) to 10 (strongly agree), following the statement, 'If I was to drink alcohol this week, I intend to drink safe levels'. For analysis results were categorised as low intention (score 1-5) or high intention (6-10).

Self-efficacy in relation to Smoking Cessation

A 12 item questionnaire (SEQ-12) (Etter et al. 2000) was used to measure tobacco smoking self-efficacy. Although a single item would have been a reliable measure, the 12-item measure was adopted to explore the presence of any variance in changes in internal and external self-efficacy following successful smoking cessation. The measure includes six items which measured the ability to refrain from smoking following internal cues, e.g. 'when I feel depressed' (Cronbach's alpha 0.95) and 6 items measure the ability to refrain from smoking following external cues e.g. 'when socialising with other smokers' (Cronbach's alpha 0.94). Responses to each measure was reported on a 5-point scale, responses were scored 1-5 (1= not at all sure, 2= not very sure, 3=

more or less sure, 4= fairly sure, 5= absolutely sure). Mean scores of each of the 6-items for external and internal self-efficacy were calculated. High internal and external self-efficacy scores represent high confidence to remain abstinent from smoking following internal (affect) or external (social) cues respectively.

Self-efficacy to refrain from risky alcohol consumption

The Drinking Self Efficacy Questionnaire (DESQ) (Young et al. 1991) was chosen as the only drinking specific self-efficacy measure which included both internal and external self-efficacy. This was considered important for this study given the expected importance of outcome expectancies and the inclusion of alcohol as the secondary behaviour change. This distinction in self-efficacy would enable further understanding of the influence of mastery on overcoming both internal and external cues. The measure included 30-Items of confidence to refrain from alcohol use. Although other measures are shorter, the 30 items were adopted to explore any variance of influence of mastery. The internal reliability of the scale was acceptable (Cronbach's alpha 0.94). Responses to each item were reported in a 5 point scale (1. not at all sure, 5. absolutely sure). Participants rated each of the 30 items, considering the statement, 'You are [*1*-5] sure you could refrain from drinking when…', 15-items measured internal self-efficacy, e.g. 'you feel uptight', and 15-items measured external self-efficacy, e.g. 'your close friend or spouse is drinking'. Self-efficacy scores were acquired by calculating a mean of all items for internal and external measures respectively. High internal and external self-efficacy scores represent high confidence to remain abstinent from alcohol following internal or external cues respectively.

Outcome expectancies in relation to alcohol consumption

The Alcohol Outcome Expectancies Questionnaire (AOEQ) (Leigh & Stacy. 1993) was chosen to assess this variable due to it's psychometric properties. This validated measure considered both positive and negative outcome expectancies of alcohol use and was the only measure to consider variance across a number of domains. This 34-Item

questionnaire explores 8 perceived effects of alcohol. Participants selected as many of the 34 items as applicable in response to the statement, 'When I drink alcohol I…?'. The 34 items comprised 4 positive, including social (6-item) e.g. 'I am more outgoing', fun (6-item) e.g. 'I have a good time', tension reduction (3-item) e.g. 'I feel less stressed', and sexual (4-item) e.g. 'I become more sexually assertive', and 4 negative measures including, emotional (3-item) e.g. 'I feel sad or depressed', cognitive impairment (5-item) e.g. I can't concentrate', physical impairment (4-item), e.g. 'I get a headache', and negative social outcome expectancies (3-item), e.g. 'I become aggressive'. A total score for both positive (Cronbach's alpha 0.94) and negative (Cronbach's alpha 0.88) outcome expectancies were calculated respectively.

5.3.3 Piloting the materials

The patient information sheets, questionnaires and consent forms were presented to the advisors for their review. They were also piloted with five smokers for clarity, understanding and for feedback on affect and unintended consequences. Feedback from both populations led to small changes in wording of the forms for simplicity of understanding. There were no comments of concern i.e. evoking emotional responses. All commented that the questionnaire visually appeared to be a large document and reported being surprised how quickly it was completed. For this reason the information sheet was updated to incorporate information on the time taken to complete.

5.3.4 Procedures

Originally, the procedure was developed to dovetail with the existing SSS, as per the outline provided in Chapter 4. Following self-referral to the SSS or a referral to the service by their primary care healthcare professional, one of the programme co-ordinators telephoned the client to offer a place on the programme at a suitable time. During this initial conversation service users were advised that they would receive a data pack to complete prior to the programme. This would include a booklet about the SSS service and the mandatory client file to be completed as

part of engaging with the SSS. For the purpose of this study, they were also to be informed that additional information on this research study (the PIS), consent forms (Appendix. 10) and a questionnaire pack would also be included. The researcher's contact details were also to be included in case of any questions or queries.

SSS users who wished to participate in the study were to sign the consent form with the researcher who was present at the beginning of the first session of the SSS programme. The researcher gave participants a PIN (Patient identification number) which had been allocated to the list of all attendees prior to the session. From this point of the study onwards, this participant identification number would be used on all study materials. Participants would be asked to complete the study questionnaires prior to attendance of the first stop smoking session (Baseline data collection point). The patient identification number could also be quoted by those wishing to withdraw from the study at any stage.

In the event as the result of a change in enrolment procedures within the SSS during the delays to the study encountered as the result of R&D approvals, prior contact with potential participants was not possible. In the revised procedure, the researcher met with practitioners at the SSS group site prior to the start of the programme. Participant Identification Numbers (PIN) were allocated to all potential participants of the SSS and then added to questionnaires and the PISs. When clients arrived to register for the programme at the first session, the practitioner handed them a research pack (which included the PIS, consent forms and questionnaire packs). Potential clients were informed that participation was optional. They were then given time to read the PIS and complete the consent form and questionnaires if they wished. There was only 10 minutes before the start of the session available to review the materials. This period of time is usually used by clients to engage with other group members. To allow users to engage with other users and to allow a week to consider the materials, consistent with the ethics approval, users who wanted to participate following consideration were asked to return completed questionnaires at the beginning of session 2, one week later.

The researcher was also in attendance and was available at the venue until the start of the clinic to answer any questions or queries.

Those attending the first SSS but failing to complete the 6 week programme would be contacted by the SSS coordinator to ascertain their reasons for dropping out. For those completing the 6 session programme, a SSS practitioner would administer the AUDIT in addition to the collection of the stop smoking documentation during the final session. Practitioners would then deliver brief advice on alcohol harm reduction to the whole group as part of the relapse prevention segment of the stop smoking programme. Practioners considered this to be the most appropriate approach, given the value of alcohol harm reduction advice in relapse prevention. Users identified as drinking at harmful or dependent levels would then be given the opportunity to be referred to an alcohol treatment programme.

The design included attendance by the researcher at the end of the session to schedule a time for a four week follow up telephone call with each participant. Information on smoking status at four weeks was to be extracted from the participant's SSS file by the researcher in line with informed consent.

Four and six week follow-ups were planned to explore whether clients had maintained their no/low risk use or had initiated and sustained any behaviour change in relation to their alcohol consumption. A structured, closed ended interview was designed within which to administer the measures of alcohol use, self-reported smoking status, smoking & alcohol self-efficacy and alcohol outcome expectancies (see Appendix 12). It was planned for the researcher to administer these interviews to reduce any reporting bias that may have occurred should the SSS practitioners have administered questions about success of smoking cessation. Furthermore, the SSS practitioners did not as standard follow up users at these times. However, at 6 months it was normal practice to ensure that client's personal data was protected, the researcher planned to conduct the telephone interviews in the SSS headquarters.

5.4 Results

5.4.1 Descriptive statistics

An invitation and questionnaire pack was issued to patients on arrival to the first session of the smoking cessation group. Of the 42 patients attending the four NHS SSS group programmes commencing during the study period, only 18 (45%) completed questionnaires at baseline. This is shown in Table 5a.

Table 5a Service users and participants

Expected Attendees	***Registered***		***Attended***		***Participated***	
N	***N***	***%***	***N***	***%***	***N***	***%***
25-100	*71*	***100***	*42*	***60***	*18*	***43***

<u>Demographics</u>

Demographic information of patients who were registered for the programme, service users and participants are illustrated in Table 5b.

Table 5b. Demographics service users and participants

		Registered		***Attended***		***Participated***	
		N	***%***	***N***	***%***	***N***	***%***
Gender	Female	*42*	***59***	*24*	***58***	*11*	***60***
	Male	*29*	***41***	*18*	***42***	*7*	***40***
Age	23 – 41years	NK	NK	20	**48**	7	**39**
	42-60 years			19	**45**	10	**55**
	61-77 years			3	**7**	1	**6**
Employment	Paid employment	*NK*	***NK***	*34*	**81**	14	**76**
	Unemployed			*0*	**0**	0	**0**
	Retired			*2*	**5**	1	**6**
	Homemaker			*3*	**7**	1	**6**
	Long term sick/disabled			*1*	**2**	1	**6**
	Student			*2*	**5**	1	**6**
Ethnicity	White British	NK	**NK**	38	**89**	18	**100**
	White & Black African			2	**5**	0	**0**
	Asian			1	**3**	0	**0**
	Black African			1	**3**	0	**0**

Given the low response rate to the request to complete the questionnaire it was important to establish how representative the study sample was of the SSS population. Of the sample who participated in the study there was a greater proportion of females 60% than males 40%. The mean age of the sample was 52 years. This was older than the mean age of all those attending the stop smoking programme during the study period. The sample completing questionnaires comprised exclusively White British participants, compared with 86% of the whole SSS population, suggesting that the sample was not representative of the smoking broader population (HSfE. 2009).

Baseline Scores

Alcohol consumption

Eighteen participants completed responses to the Alcohol Use Disorder Identification Tool (AUDIT) at baseline. Responses were collated and are displayed in Table 5c below.

It was found that 34% of the sample, 30% males and 36% females reported consuming 'hazardous' and 'harmful' levels of alcohol. Hazardous consumption is defined by AUDIT as any behaviour which may be hazardous to the user or others, due to frequency of use or high volume of use in one episode. Harmful use is defined by a combination of frequency and high volume use. This is considerably higher than the national average 20% (McManus et al. 2009) for females, and comparable for males 29%. There were no dependent drinkers identified in the study population. This is significantly lower that then National average 6% (McManus et al. 2009).

Table 5c Alcohol use disorder in users of the stop smoking programme

Alcohol Use Disorder	***Stop Smoking Service Users***	
	N	*%*
No/Low Risk	*12*	**66**
Hazardous	*5*	**28**
Harmful	*1*	**6**
Dependent	*0*	**0**
Total	*18*	**100**

Patients who complete the AUDIT screening for alcohol were mostly in the no or low risk category. Hazardous and harmful drinking was engaged in by 34% of the sample.

Alcohol use was also considered by gender to facilitate comparisons with national estimates. Figures are displayed in Table 5d. The majority of males (70%) and females (64%) consumed alcohol at low or no-risk levels. Hazardous levels of alcohol consumption were reported by 36% of the female participants. One male participant disclosed consumption of harmful levels of alcohol (15%). Hazardous and harmful drinking was engaged in by 30% of the male participants.

Table 5d Alcohol consumption by Gender

Alcohol Use Disorder	***Stop Smoking Service Users***			
	Male		*Female*	
	N	*%*	*N*	*%*
No/Low Risk	*5*	*70*	**7**	**64**
Hazardous	*1*	*15*	**4**	**36**
Harmful	*1*	*15*	**0**	**0**
Dependent	*0*	0	**0**	**0**
Total	*7*	100	**11**	**100**

Six participants (50% of the total) reporting no/low risk, added qualitative information to the questionnaire outlining a history of previous alcohol dependence and current abstinence.

Nicotine Dependence

The Fagestrom test for nicotine dependence was calculated for each participant. Consistent with recommendations from a previous study (Tiffany et al. 2004; Wellman et al. 2006), dependence was calculated in discrete categories, i.e. 'low' or 'high' dependence. The sample was evenly distributed with regards to nicotine dependence, with 9 participants (50%) reporting high nicotine and 9 (50%) low dependence.

All participants completed details on their smoking history. The majority, 14 (78%) of participants had not made a previous quit attempt. Of those who had, the number of previous quits ranged from 1-12, with an average mean score of 4.

Alcohol consumption and tobacco dependence

In order to explore the levels of engagement in multiple health-risk behaviours, descriptive frequencies for tobacco and alcohol dependence categories are outlined in Table 5e.

Table 5e Alcohol consumption and nicotine dependence

Alcohol Use Disorder	***Nicotine Dependence***				*Total*	
	High		*Low*			
	N	%	*N*	*%*	*N*	%
No/Low Risk	*6*	**33**	*6*	**33**	*12*	**66**
Hazardous	*2*	**11**	*3*	**17**	*5*	**28**
Harmful	*1*	**6**	*0*	**0**	*1*	**6**
Dependent	*0*	**0**	*0*	**0**	*0*	**0**
Total	*9*	**50**	*9*	**50**	*18*	**100**

Tobacco dependence and levels of alcohol consumption did not appear to be related in this sample. There were equal proportions of high (N=6) and low (N=6) nicotine dependence in those with low risk drinking behaviour. The one harmful drinker represented in the sample indicated a low level of nicotine dependence.

Self-efficacy in relation to smoking cessation & alcohol consumption

There were clear differences in the confidence to refrain from alcohol use and smoking. The scores for self-efficacy to refrain from smoking, as displayed in Table 5f, were low in response to both internal affect related triggers (m=2.22) and external, social triggers for smoking (m=2.67). Participants were confident to refrain from alcohol use both in response to internal (m=4.28) and external triggers (m=4.22).

Table 5f. Self-efficacy in relation to smoking cessation & refraining from alcohol consumption

	Internal Self-Efficacy	***External Self-Efficacy***
Smoking Cessation (N=18)	*Mean = 2.22* *Range 1-5 (SD = 1.12)*	*Mean = 2.68* *Range 1-5 (SD = 1.10)*
Refrain from Alcohol Consumption (N=18)	*Mean = 4.28* *Range 1-5 (SD = 1.02)*	*Mean = 4.22* *Range 1-5(SD = 1.00)*

Outcome expectancies of alcohol use

All 18 participants completed the outcome expectancies questionnaire. The results for positive and negative outcome expectancies are outlined in Table 5g. Participants ticked as many as applied, out of a possible 17 positive and negative outcomes. More participants reported negative outcome expectancies (m=8.52) in comparison to positive outcome expectancies (m = 5.22).

Table 5g Expectancies of alcohol use

	Positive (N=18)	***Negative (N=18)***
Outcome Expectancies of Alcohol Use	*Mean = 5.22* *Range 0-17 (SD = 6.43)*	*Mean = 8.52* *Range 0-17 (SD = 4.41)*

As the sample size was so small, no repeated measures were completed. Therefore it was not possible to conduct further analyses.

Information and Brief Advice for Alcohol Harm Reduction

All practitioners reported delivering brief advice for alcohol harm reduction during the final session of the stop smoking programme. The advice was delivered in the group discussion session and introduced as an important component for relapse prevention. Practitioners did not screen individuals for alcohol use to tailor advice for the session but instead encouraged a group discussion for 5-10 minutes within the 60 minute relapse prevention session.

5.4.2 Follow up measures

It was decided to terminate the follow up measures for the study as there were insufficient questionnaires completed at baseline. Of the 18 participants, 14 successfully stopped smoking on completion of the programme; the baseline alcohol use and self-efficacy for smoking status at programme completion are displayed in Table 5h.

Table 5h Baseline alcohol risk and self-efficacy and smoking status on completion of the programme

Baseline Measures	***Stopped Smoking (N=14)***	***Smoking (N=4)***
Alcohol Risk	*No/Low Risk 9* *Hazardous 4* *Harmful 0* *Possible Dependence 1*	*No/Low Risk 3* *Hazardous 1* *Harmful 0* *Possible Dependence 0*
Internal Self-efficacy to stop smoking	*Mean = 2.25* *Range 1-5 (SD = 1.18)*	*Mean = 1.50* *Range 1-2 (SD = 1.0)*
External Self-efficacy to stop smoking	*Mean = 2.69* *Range 1-5 (SD= 1.20)*	*Mean = 2.00* *Range 1-3 (SD = 1.08)*
Internal Self-Efficacy to refrain from alcohol	*Mean = 4.25* *Range 2-5 (SD =1.06)*	*Mean = 4.50* *Range 4-5 (SD = 0.97)*
External Self-Efficacy to refrain from alcohol	*Mean = 4.19* *Range 3-5 (SD = 1.05)*	*Mean = 4.50* *Range 4-5 (SD = 1.03)*

Alcohol misuse was higher in those who successfully stopped smoking in comparison to those who did not. Both internal and external self-efficacy to stop smoking was lower in those who continued to smoke in comparison to participants who stopped. Self-efficacy to abstain from alcohol was slightly higher in those in continue smoking in comparison to those who stopped. No analysis of statistical significance was conducted due to the small sample size.

5.5 Discussion

It was not possible to implement the full study design due to delays in the Research & Development approval and subsequent changes to processes of the host Stop Smoking Services. A small patient sample completed the questionnaires at baseline. Due to the very short time period available for participants to complete the questionnaire it is unlikely that the results were representative of the SSS population.

The findings must be reviewed with caution as the response rate was low (less than 50% of the target population). The demographics of participants were not representative of the population using stop smoking programmes. As there was a short period of time allocated for participants to complete the questionnaires it is likely that completion would have been more challenging for those with poorer literacy. Given the known social gradient in engagement in more than one risk taking behaviour, this challenge to questionnaire completion is likely to have had a detrimental impact to the validity of the data collected.

The implications of the limited analyses are as follows:

5.5.1 Alcohol misuse in users of the stop smoking service

It was found that 34% of the sample, 30% of males and 36% of females reported consuming hazardous or harmful levels of alcohol. This is considerably higher than the national average 20% (McManus et al. 2009) for females, and comparable for males 29%. There were no dependent drinkers identified in the study population. This is considerably lower than the national average of 6% (McManus et al. 2009). However, a

number of participants who reported no/low risk did make reference to previous alcohol dependence suggesting that this population were vulnerable to alcohol misuse and therefore may benefit from ongoing support with management of alcohol use. At the time of this study there were no data available to explore if this proportion of recovering alcohol misusers is representative of the national population.

Previous research has indicated the cumulative risk of engaging in more than one LRB (Gulliver et al. 2006). This did not appear to be a significant factor in this study population. The sample's dependence on nicotine was evenly distributed, only half of the sample (50%) reported high dependence on nicotine. Previous studies exploring alcohol use in smokers considered only smokers with high nicotine dependence (Kahler et al. 2008). This may suggest that engagement in multiple risks are only significant when considering physiological dependence and not in relation to engagement in the behaviours as considered in this study. Physiological dependence would be considered in the design of future research.

Self-efficacy to refrain from smoking was significantly lower than self-efficacy in relation to reducing alcohol consumption. There were no observable differences across internal and external self-efficacy; this is surprising given that levels of nicotine dependence varied throughout the sample. Outcome expectancies for alcohol use were negative, suggesting that the population who completed the questionnaires had some knowledge of the risks of alcohol misuse.

Advisors delivered the alcohol information and advice, but failed to deliver the 'identification' (supporting users to understand their alcohol consumption in the context of risk of harm) component of the intervention with individuals. This potentially limited the impact of the intervention. It should also be noted that a proportion of the participants, who had consumed alcohol at levels of considerable risk to health prior to enrolment on the SSS, were abstinent at the time of the study and thus would not have been recognised as alcohol consumers on the AUDIT

screening. This anomaly should also be borne in mind when considering the results and in making recommendations about measurement of alcohol intake in future.

Participants who successfully stopped smoking at the end of the programme reported slightly higher self-efficacy at baseline in comparison to those who did not stop smoking. There were no observable differences across alcohol use and self-efficacy in those who did and did not successfully stop smoking. The findings are inconclusive given the small, unrepresentative sample.

5.5.2 Challenges of this operational research

There were a number of challenges in conducting the study. Two main issues had a significant impact on the implementation of the study design.

First, the stop smoking service which participated in the study delivered a service across two NHS organisations. This led to significant delays in research governance approvals. Also during this period, the original paper format for registration for users of the SSS was replaced by electronic forms. It had been agreed that the questionnaire packs would be sent to users as part of the stop smoking starter pack prior to the initial SSS session. This would have enabled sufficient time to read through consent processes and complete the questionnaires prior to the initial attendance. Advisors decided that it was inappropriate to send participants the study questionnaires without the starter packs (by then, in electronic form) as they were concerned that this would reduce interest in their programme and would reduce attendance. The result of this unplanned procedural departure was that users were asked to complete the questionnaires at the beginning of the sessions when there was inadequate time with which to complete them. The practitioners' beliefs are further in Study 2 (Chapter 6).

In the original design phase, the researcher had anticipated that a thorough understanding of the practitioners' values and beliefs would be

crucial to the success of the project, hence the inclusion of the preparatory work and supervision sessions and the inclusion of interviews with practitioners (Study 2). However, despite self-declared intentions to deliver the intervention during the preparatory stages, advisors subsequently reported additional concerns about alienating clients and losing clients as a consequence of implementing the agreed protocol. This ultimately resulted in significant detrimental impacts on Study 1. Study 2, described in Chapter 6 then became a more crucial element of the research programme than had originally been anticipated.

5.5.3 Limitations

The response rate for the questionnaires was very low and the demographic profiles of those who completed the questionnaires were not representative of users of the stop smoking service more generally. Thus the eventual sample size was significantly below the target estimated by the independent statistician prior to the initiation of the study. The alcohol use identification tool failed to identify participants who were in a period of abstinence from alcohol.

Measures of physical activity and dietary intake were not recorded as part of the questionnaires. Without this information, a comprehensive understanding of engagement in more than one health risk lifestyle behaviour could not be gained. This also restricted the ability to improve understanding of levels of engagement in multiple risk taking behaviours and also in relation to generalising the observations made in the study across lifestyle behaviours other than smoking and alcohol consumption.

Although this study was designed to focus on the constructs of self-efficacy, mastery and outcome expectancies, there was no explicit measure of perceptions of social norms. To consider the utility of the broader Theory of Planned Behaviour as a framework for studies of change in multiple risk behaviours, future study in this area should include beliefs about social norms. This may be particularly pertinent to studies involving alcohol consumption, as responses from the

practitioners themselves indicated that their own beliefs about social norms conflicted with the messages in the alcohol brief advice intervention. It is likely that this was also the case for participants.

5.5.4 Recommendations for future research

Although only a small sample participated in this study, risky alcohol use was detected in a larger proportion of the female participants than is observed nationally. However, it may be that the failure of the AUDIT measurement tool to identify those in a periods of abstinence from alcohol current at the time of the study may have skewed the results. Future research should explore gender differences in engagement in multiple health risk behaviours and should also more suitable measures of those vulnerable to alcohol misuse (including previous misuse).

The design of Study 1 was informed by observations and calculations made more than a year before the eventual initiation of the study. During these delays, changes to the SSS procedures occurred. Risk assessments should routinely be made about possible changes to service provision in the event of delays and the potential impact of these on the research objectives. Regular update meetings should be held with the researcher and key stakeholders during any delays to inform any necessary adjustments to the research protocol.

The experience of Study 1 highlights that despite the groundwork carried out by the researcher in obtaining engagement and approval of the study design by the relevant service manager, practitioners and regulatory authorities, in the event, the practitioners' concerns about the potential alienation of clients in relation to including an additional intervention had a greater influence on their actual behaviour than did their commitment to supporting the research. Whilst buying in to the overall aim of the study, a resistance to introducing 'new demands' on their clients became a barrier to their participation. The imperative of maximising the retention of clients in the SSS and achieving a successful smoking quit rate may have over-

ridden other considerations. The beliefs and motivations of practitioners is explored in more depth in Study 2.

Chapter 6

A Qualitative Exploration of Practitioners' Perceptions of the Feasibility of a Multiple Lifestyle Intervention

6.1 Introduction

Although the design of the original research programme included the intention to review the experience of practitioners in delivering the enhanced SSS and ABA intervention through the mechanism of interviews, the failure of practitioners to deliver this intervention as planned threw into sharp relief the importance of exploring in depth the reasons for this failure. During supervision sessions (as outlined in chapter 5) advisors expressed concern about raising the issue of alcohol. Advisors reluctantly introduced the topic of alcohol within their groups, but did not administer the screening needed to identify and communicate personal risks. The original 'de-briefing' interviews were therefore re-cast as an in-depth exploration of this failure. The explorative, semi-structured open interview structure which was approved by the ethics committee enabled this more in-depth study.

The literature review for Study 1 had highlighted the importance of healthcare clinician's beliefs about the 'relevance' and 'effectiveness' of brief advice in relation to their objectives for treating their patients. Furthermore, clinicians' beliefs about patient's locus of control and their ability to make changes had a detrimental influence on activity in brief intervention studies. A comprehensive review of factors to support changes in clinicians' activity also identified personal affect and environmental influences as important areas for consideration.

Corbin & Strauss (1991) contextual model defines 3 important dimensions to exploring multi-dimensional constructs. These are: *Interactional* (e.g. what is perceived to happen when brief advice is delivered), *Organisational* (e.g. what is needed to support implementation), and *Biographical* (e.g. the practitioners' own past experience, beliefs and attitudes). These dimensions informed the

interview schedule which comprised open questions to explore; interactional constructs, *'What are your thoughts or experiences of an alcohol intervention being delivered as part of the Stop Smoking Service';* biographical constructs, '*Can you tell me about what alcohol means to you'* and '*Can you tell me about the alcohol use in your patients';* and organisational constructs, *'Were there any factors that helped or prevented delivery of the alcohol intervention'.*

In reviewing the options for qualitative approaches, it was decided to adopt a semi-structured interview format. In conversations during the supervision sessions, comments made by practitioners raised the possibility that their views about the suitability of the ABA may be coloured by their own background, training and possibly their own experience of alcohol. A semi-structured approach to data collection offered the possibility of introducing a number of discussion areas without being overly prescriptive about the content and direction of the ensuing discussion. This enabled advisors to explore feelings and opinions and how these may relate to their beliefs about the feasibility of the enhanced intervention (Gill et al. 2008).

6.2 Method

6.2.1 Participants

A purposive sample including all Stop Smoking Service practitioners who had taken part in Study 1 also agreed to participate in Study 2. All had met the interviewer on several occasions before and during Study 1 and prior to the commencement of these interviews.

The demographic characteristics of the sample are outlined in Table 6a. All practitioners were female and their ages ranged from mid-twenties to mid-sixties. The majority of practitioners were White British, two Indian British and one practitioner who was Polish.

Table 6a Demographic characteristics of the sample of stop smoking practitioners

		Participants	
		N	*%*
N		*8*	**100**
Gender	Male	*0*	**0**
	Female	*8*	**100**
Age	26-35yrs	*3*	**38**
	36-45yrs	*0*	**0**
	46-55yrs	*3*	**38**
	56-65yrs	*2*	**24**
Ethnicity	White British	*5*	**62**
	Indian British	*2*	**24**
	White European – Polish	*1*	**12**

6.2.2 Procedure

At the start of the interview, each participant was asked about her professional background and work experience in the field of health promotion. The interview schedule (Appendix 12) included four open questions and a series of keyword prompts for the interviewer – all designed to promote a multi-dimensional approach to data collection. The interview schedule was initially conducted with three practitioners in February 2010. The schedule of questions was reviewed at this point in discussion with supervisors. It was concluded that the schedule was appropriate, and was generating rich and relevant data. The same schedule was subsequently used to guide the final five interviews.

All interviews were carried out within 4 weeks of the end of the scheduled intervention. The interviews lasted between 25 and 60 minutes and were digitally recorded with the consent of participants.

The audiotapes of the interviews were transcribed by the researcher. Three reviews of each recording were conducted to ensure that all data had been captured. One transcript was randomly selected for peer reviewed as an additional check for any potential inaccuracies. None were identified.

6.2.3 Analysis

As the literature review had informed the interview schedule and as the researcher was already experienced in the field of alcohol brief advice interventions, true naivety to the research topic was not possible. It was therefore decided that a pure inductive approach to analysis could not be

achieved (Murray & Chamberlain. 2009). Grounded methods were not considered appropriate given the drivers adopted, instead a hybrid approach (using elements of both inductive and deductive reasoning) to thematic analysis was considered most appropriate (Fereday & Cochrane. 2006).

An initial inductive Thematic Analysis (TA) enabled themes to be identified throughout the practitioners' accounts of alcohol and smoking using line by line coding. The detail of the inductive reasoning was as follows:

Analysis began immediately following the interviews and included a three phase process of reading transcripts and line by line reporting of key themes, re-reading transcripts to explore additional themes and umbrella themes and finally exploring interconnectivity or links between themes. This is a standard approach to inductive reasoning, and followed the guidance as outlined by Nueman (2000). The detail of the approach within this first stage was as follows:

(i) The researcher read through transcripts and coded them line by line to enhance reliability and any dominant themes in each line were noted.

(ii) Emerging themes or consistencies and discrepancies through the subsequent interviews were considered. These emerging themes were collated and were further developed through analysis of each interview.

(iii) The emerging themes were discussed in supervision session and challenged by the doctoral supervisor.

(iv) The researcher considered working titles for themes and began clustering these into overarching themes and sub themes.

(v) The transcripts were re-read to review the themes, sub-themes, consistencies and discrepancies.

(vi) The initial themes and sub-themes were tabled. Extracts from the interviews were cut and pasted under these initial theme and sub-theme headings. Consistencies and discrepancies were further explored and

themes refined. This process resulted in the development of a table of themes (Appendix 13).

(vii) The researcher re-read the interviews to identify any content which did not fit into the themes.

(viii) Transcripts were re-read and data extracts were allocated to illustrate common themes.

Deductive, theoretical TA methods were then applied, utilising the existing theory & knowledge base from the earlier literature reviews to interpret the identified themes and further understand the interconnectivity between themes (Braun & Clarke. 2006). The flexible approach of TA enabled the application of bottom-up and top-down methods for analysis of the data.

Deductive, theoretical TA methods were then applied, utilising the existing theory & knowledge base from the earlier literature reviews to interpret the identified themes and further understand the interconnectivity between themes (Braun & Clarke. 2006). The flexible approach of TA enabled the application of both bottom-up and top-down methods for analysis of the data.

This theoretical approach was applied to, i) interpret the findings in relation to the evidence base and ii) highlight any themes which had not been identified in the existing literature. In line with Kazdin, 2003, the application of existing knowledge was considered a crucial step in further understanding the processes for change in health care professionals. The literature review reported in 3.4 highlighted Michie et al's (2008) discrete domains for healthcare professional changes in practice as the most comprehensive framework available at the time of this study. This framework was therefore used as a reference point for discussion following the identification of the themes in the inductive analysis. More recent theoretical frameworks were presented and discussed within the summaries in section 6.3.1 and in the discussion section 6.4.

6.3 Results

6.3.1 Professional background and work experience

In the pre-interview review of the service (outlined in chapter 3), it was identified that the practitioners came from a range of professional backgrounds. All had a minimum of 2 years of experience of working in Stop Smoking Services, however the range of experience was considerable, and the characteristics are displayed in Table 6b.

Table 6b Professional characteristics of the sample of stop smoking practitioners

		Participants	
		N	*%*
N		*8*	**100**
Profession	Health Promotion	*3*	**38**
	Health Care Assistant	*2*	**25**
	Nurse	*2*	**25**
	Pharmacist	*1*	**12**
Years of Stop Smoking Experience	2-5yrs	*4*	**50**
	6-10yrs	*4*	**50**
Primary Work Context	Community	*6*	**76**
	Secondary Care/Hospital	*2*	**24**

During the interviews, personal profiles emerged for each advisor; these are presented alongside their profession and speciality in Table 6c and include a description of their own engagement in alcohol consumption to facilitate a more detailed understanding of their values and beliefs about this particular lifestyle behaviour.

Table 6c Participant profiles

Participant	***Speciality***	***Profession***	***Profile***
C Older White British	Community practitioner	Health Care Assistant	C lives alone with her young son. C regularly enjoys drinking with friends.
S Other Indian	Community practitioner	Medical Professional	S lives with her young son and husband and alcohol is associated with social celebrations/special occasions.

British			
L Younger White British	Community practitioner	Health Promotion	L lives with her young daughter. The father of L's daughter was a dependant drug and alcohol user. L's personal experience of alcohol is within social occasions.
G Older Indian British	Community Practitioner	Health Care Assistant	G lives with her mother and father in law. G does not and has never consumed alcohol.
M Older White British	Community Practitioner	Health Promotion/Public Health	M lives with her husband. M enjoys drinking alcohol with friends socially.
L Older White British	Community Practitioner	Medical Professional	L lives with her husband and non-dependent children. L has first-hand experience of alcohol abuse, her husband attended Alcoholic Anonymous support 10years ago. L considers her alcohol use as sociable.
J Younger White British	Hospital Practitioner	Medical Professional	J lives with her long term partner. J recognises her drinking has been heavy and sociable but over the past couple of years reports significantly reducing to once a month. J described this reduction in consumption as due to age related life changes.
A Younger White European	Hospital Practitioner	Health Promotion	A lives with two housemates. A does not drink alcohol due to a strong interest in competitive running and fitness.

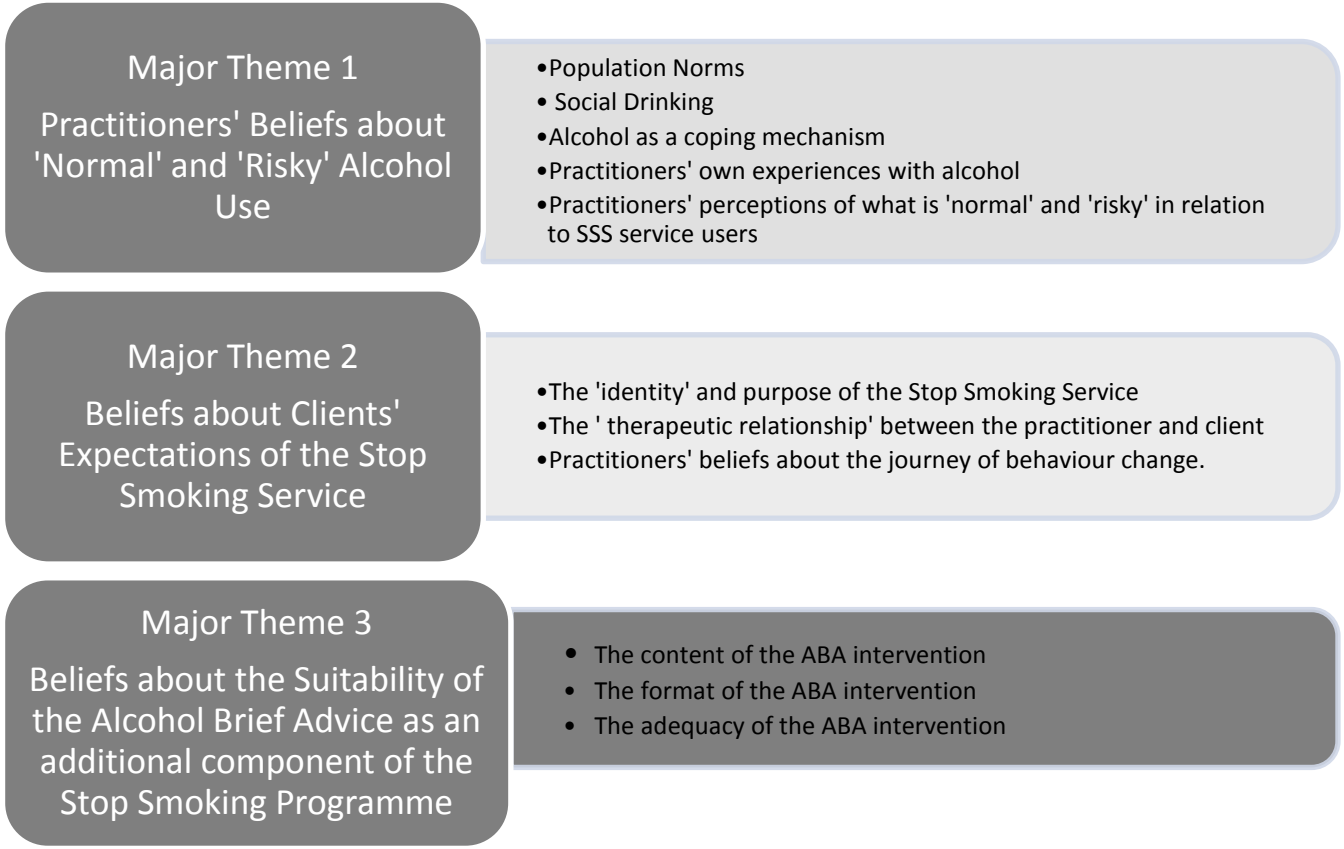
The relationship between the variables and the responses are outlined in the later, discussion section of this chapter.

6.3.2 Themes & Sub-themes

Three main themes, each with related sub-themes were identified from the analysis of the interview data (see Figure 6.a).

The proportion of time spent espousing views about alcohol use and the emphasis of alcohol related beliefs in the thematic analysis was surprising and unexpected.

Figure 6a. Major Themes and Sub-themes from the Practitioners Interviews



Major Theme 1

Practitioners' Beliefs about 'Normal' and 'Risky' Alcohol Use

When exploring the practitioners' perceptions of alcohol use in their clients, all discussed their own beliefs about population norms in relation to alcohol consumption amongst the clients of the SSS.

The participants' previous experiences with alcohol and their normative beliefs about alcohol use (even in the absence of alcohol use in their own lives) appeared to have a strong relationship with their attitudes to drinking by others, including clients of the SSS. The context of alcohol use (for example, drinking in a social context) framed their definitions of acceptable and unacceptable levels of drinking, rather than merely the volume of alcohol consumed.

Sub theme 1: *Population Norms: Drinking as a social activity or as coping mechanism.*

The perceived norm that it is common and acceptable to consume alcohol (sometimes in large quantities) in social situations was reported by five out of the six practitioners with predominantly community experience. However, consuming alcohol in other situations, particularly as an 'escape' was viewed as a more serious health problem.

'Everyone drinks with friends, it's as common as having a cup of tea [laughs], our smokers though turn up stinking of drink and are drinking at home to forget and cope, that's a problem'. [S, older, community, health promotion background]

The consumption of large amounts of alcohol was perceived by several of the practitioners as 'normative'. Several believed that alcohol misuse is increasing, using specific examples drawn from within their own families. This trend was described as symptomatic

of bigger problems in Western Society, with an increasingly stressful modern living environment offering very little in terms of alternative methods of stress relief.

'*I used to binge drink, looking back wasn't the best idea but most of my friends still do. I wouldn't go home and drink but it's a social thing if I go out I'll drink. I've got Italian blood so yes it's a big part of my family culture. I drink a few times a week, it's not excessive. It's a way to unwind' [J, younger secondary care practitioner, medical background]*

All practitioners described alcohol abuse as primarily a modern phenomenon. The older practitioners reflected upon why this may be the case, describing how the problem had evolved based upon their experiences and observations.

'In my youth I didn't drink, us women spent money on clothes not drink it was too expensive. Alcohol has changed so much in the last 30 years, it's so accessible. Having said that I don't think people even enjoy pubs anymore, these high powered women, they have a drink to make themselves feel better, relieve some stress, they think oh I've had a dreadful day I'll have a drink' [M, older, community, health promotion/public health background]

Some compared alcohol consumption as a coping mechanism which has taken the place of substance use, such as prescription medications taken for anxiety by 'housewives' in the 1960's.

'It's much more prevalent than it was 40 years ago, women trying to diet now, it's the drink they are struggling to give up. 40 years ago it was totally unacceptable for women to drink the way they do now. It cuts across all spheres of society, I suppose before it was tranquilisers women used to cope.' [L, older community, medical background]

Although the consumption of greater levels of alcohol were accepted as the norm, some described these in terms of disappointment.

'*You'd think that some of them are men the way young women carry on these days, but it seems totally acceptable.' [M, older, community, health promotion/public health background]*

The norm of alcohol consumption as a key (and thus acceptable) aspect of social behaviour, rather than as a problem in need of an intervention, was frequently expressed.

'*the average guy he says I love my drink after work, my work is out with colleagues for a pint every night and so you know it's impossible for me not to, it's such a big part of work and social life. [G, older, community health promotion background]*

Sub theme 2: Practitioners' own experiences and relationships with alcohol

The belief that alcohol consumption (including consumption to 'excess') had clearly affected the practitioners' intentions and behaviour in relation to the ABA.

I think staff feel like hypocrites, we all drink so who are we to tell them not to?' [A, younger, community practitioner, health promotion background]

Four practitioners disclosed personal experience of alcoholism, either professionally or personally (as the result of the reliance on alcohol by a family member or friend). They identified the inability to 'know when to stop' as key, and as the greatest risk in relation to drinking by others.

'You can start out quite sociable and then it trips over the line. It can happen very quickly I don't think people realise, I don't know I

suppose it nullifies everything, slows everything down' [L, younger, community, health promotion background]

'when it becomes a problem in their personal life. He can't look after himself, you know alcohol becomes their priority. They can't do without it. Priority over relationships, they chose alcohol over their wife, you know their wife is saying, please don't drink or you can't go out and drive that car, but alcohol is their priority.' [L, older, community, medical background]

'I think it is just a bit difficult to know what the limit is, because you have one drink and then have another one then after that you have had two or three and it's natural to have the fourth one and it's just like no turning back.' [A, younger, secondary care, medical background]

Sub theme 3: Practitioners' perceptions of what is 'normal' and 'risky' in relation to SSS service users

A distinction was made between alcohol consumption in social contexts ('social drinking') and a dependence on drinking as a coping mechanism. In making this distinction, some practitioners also drew a line between similarities between their own levels of alcohol consumption (social drinking) and that of dependent drinkers. The evidence for alcohol risk and benefits were also discussed.

'[my friend] Her husbands divorced her, her children have moved away, I know she has a couple of glasses of wine of a night, to be honest if she doesn't go falling over, I don't see a problem with that, it's a conscious decision a way to forget, it's not like she's out of control. [M, older, community, health promotion/public health background]

'But for alcohol there are some reports that say it is good for you' [J, younger secondary care practitioner, medical background]

The risks of over consumption of alcohol were described in relation to 'losing control' of physical and cognitive faculties and the consequences of the related risks of accidental injury and reduced inhibition. Risks were described as including the hazards associated with falling and the social and relationship consequences of physical or verbal abuse to others. Physiological risks were rarely mentioned by practitioners and scepticism was expressed about the evidence base supporting definitions of 'hazardous' drinking.

'*There probably is you know some benefit to have a glass of wine a night. Drinking loads in one go is probably much worse for you, they can't make their minds up.' [C, older, community, health promotion background]*

'I'd say problem drinking is when you're doing over half a bottle a night, if you're on your own, yes every night on your own, that's excessive.' [L, younger, community, health promotion background]

The motivation for drinking excessive amounts of alcohol was perceived as key in defining 'hazardous' drinking, rather than the immediate or longer term risks to health.

'I suppose it depends why you are drinking. If you are out with friends drinking socially that's acceptable, if you go out to get drunk that's probably the wrong attitude and that's when people are more likely to lose control. It can spiral out of control you know when people drink to forget, I suppose it's on a kind of scale' [J, younger, secondary care practitioner, medical background]

Most practitioners believed that the majority of users of SSS consumed alcohol in a dependent manner, outside of social situations.

'Patients who would drink to excess I would say is a large proportion of the population.' [J, younger community practitioner, medical background]

'*I'd definitely say over 50% of the people we see are serious drinkers, having a drink to get them through the day' [L, younger, community, health promotion background]*

Dependent drinkers were described as 'these people' and were portrayed as having very different lives and values to that of themselves as practitioners. Contrasts were evident in the light hearted tone of voice used to describe social drinking and the concerned and serious tones used to describe dependent drinkers. The characteristics of clients in this second category included complex social and mental health needs and a lack of self-control. In contrast to the lack of concern expressed in relation to the potential physical harm associated with drinking in social contexts, the consequences of on-going dependent alcohol use were described as including the risk of serious and progressive physical and psychological harms.

'They've got no structure in their lives.' [S, older community practitioner, health promotion/public health background]

'Smoking and alcohol play a role, but it's in someone's life. It's linked to lots of other aspects about how they feel, when these things become a problem, its social issues; you need to look at the bigger picture.' [J, younger, secondary care practitioner, medical background]

The motivation for alcohol use was characterised as being to 'forget' or 'numb the pain' of the social isolation resulting from chaotic and unstructured lives. The nature of the causal relationship between social isolation and use of alcohol as a coping mechanism was not clear and was portrayed in different ways. Practitioners trained medically or who had personal

experiences of witnessing alcoholism reported the isolation as an outcome rather than the cause of disease and chronic mobility issues.

'*they end up in a cycle of social isolation and actually finding they are relying on it more using more as crutch, I think for these groups of people it can be really tough. If they are home alone a lot, it's a comfort for them. That's a real problem drinker, drinking on your own; perhaps if you're trapped at home with a disease, it is the only pleasure' [J, younger, secondary care practitioner, medical background]*

Practitioners continually reported problem drinking as a lack of personal control or agency to know when to stop.

'If you are going out to get drunk, I think you have to think, erm why are you needing to get drunk, maybe it's a way to relax, they can forget if they have any issues or worries it could be discipline as well as a bigger problem' [A, younger, secondary care, health promotion background]

This lack of control was described alongside a lack of commitment to change. Dependent drinkers were described as needing to have a dramatic change in their circumstances to encourage them to take control. At this point when they are in control and health seeking they could be supported, but before this time practitioners reported that there was very little that they could do to help.

'It's a problem when it dominates everything and takes away sort of clarity from the situation. I think because it's so accessible and acceptable they can just fall into that without realising. It just needs a slight tip of the balance, if they don't have the willpower it can get out of their control quickly.' [L, younger community practitioner, health promotion background]

'They are so dissatisfied with their lives, they are unhappy, it's your family and friends that get you through and if you don't have I don't

know what they're supposed to do. There are a load of people that don't think that it's an issue, if someone doesn't think it's a problem, it's quite difficult for you to convince them that they have an issue.' [L, younger, secondary care, medical background]

Although superficially these accounts may appear distinctively different, when considering theoretical frameworks of behaviour change, for example the Theory of Planned Behaviour (Ajzen. 1991) and the Social Learning Theory (Bandura. 1977), this is not necessarily the case. Both accounts are outlining the influence of low self-efficacy (caused by an external stressor either lifestyle or physical disease) on the ability to manage the behaviour of alcohol use. Medically trained practitioners took this understanding further to explain the influence of physical addiction on the ability of patients to manage their lives.

'They chose alcohol over everything. It becomes priority when someone has a drink problem, it comes above everything else, they care more about having a drink than anything or anyone else, and it's the priority.' [L, older, secondary care practitioner, medically trained]

This multi-dimensional relationship between isolation, self-efficacy and intention to change was central to the practitioners' definition of problem drinking. This highlights an insightful and intuitive understanding of the complex influence of addiction on motivation. This is consistent with the academic analysis of addiction as outlined by West (2001), which highlights the interplay between the motivational system, impulses and learnt associations.

Several practitioners expressed the view that the complexity of the needs of dependent drinkers required specialist intervention.

'If they are stressed or unhappy so they just switch to problem drinking….drink to forget…it spirals completely out of control…probably need specialist interventions.. I think some

people do really struggle to control addictions' [L, younger, community practitioner, health promotion background]

Progressive physical harm was described as coming much later than the physical addiction. Only those practitioners, who had direct professional experiences, reported the serious physical and potentially fatal damage caused by the consumption of alcohol.

Cognitive impairment following alcohol abuse was described as the barrier to being able to prevent the physical damage due to a reduced agency to stop drinking.

'*Yeah I see this one lady, in her early forties, desperate to give it up. She's just not had the ability you know. She's you know having the rawest kind of effects physical and social everything is affected from alcohol. It's been going on for ages and now she has major oesophageal bleeding. She's desperate to give it up.' [J, younger, secondary care practitioner, medical background]*

'I don't think that people know, they know it's bad for them but they don't know what it's doing to their liver, I've seen them come in, there liver its horrible, that's the end of them. They don't know until they get to that point that they could end up dying from it, they're so addicted.' [A younger, hospital practitioner, health promotion background]

Alcohol use was recognised by most advisors as having a detrimental impact on the success of the stop smoking programme.

'So many of the people I see who have drinking related issues, they are not ready to give up smoking. It is better to advise them to come back when they're ready.' [M, older, community practitioner, health promotion]

'*they can't seem to stop the drinking which is bad so bad, and then they light up one cigarette and think I can get away with one*

cigarette and forget that they under the influence of drink.' [G, older, community practitioner, health promotion]

'It's the coupling of it [alcohol and smoking] and the association that people put on the association, if people are drinking they just smoke, because smoking and drinking are coupled together.' [C, older, community practitioner, health care assistant]

'A lot of people who come to stop smoking associate alcohol and drinking at the same time [as smoking]. They might not smoke during the week but when they go out at the weekends and binge drink that's when they'll smoke as well...It most definitely influences our quit rates...they've had a drink so they smoke' [M, older, community practitioner, health promotion]

These beliefs about social norms and risk taking behaviours have an effect on advisors beliefs about their role in delivering interventions for harm reduction for alcohol. This will be explored further as the major theme 3.

Summary: Major Theme 1

Alcohol use was recognised as having a negative impact on the success of the stop smoking programme. Advisors beliefs about alcohol related harm was defined by a dividing line between 'normal' social drinking and dependent 'harmful' drinking rather than by consideration of the amounts of alcohol consumed.

The influence of perceptions of social norms resonates with the TPB, which identifies normative influences and attitudes and major predictors of control and intention to engage in behaviour, in this case, delivery of brief advice for alcohol. Advisors attitudes and beliefs developed through personal experiences rather than training was dominant throughout narratives.

Distancing themselves from 'these people' and the practitioners desire to understand patients drinking may be understood in terms of the practitioners i) knowledge, ii) own self-standards and iii) social norms. Each of these components is identified in Michie et al's (2005) '12 Domains of Healthcare Professionals Behaviour Change Framework'. i) Knowledge of addiction and the intricacies associated with this were used to describe the complexity of problem drinking in their patients. Knowledge of addiction was also related to perceived control to address drinking behaviour, ii) self-standards (or attitudes) and iii) social norms in combination were important factors for determining the practitioners desire and intention to implement the intervention. Consistent with a previous study conducted by Godin (2008), these TPB factors are important for understanding the discrepancy between intention and implementation of the intervention.

These identified domains indicate that support will be needed to successfully embed a new intervention in order to overcome the reluctance from practitioners to implement changes in practice. To achieve this, the beliefs for each identified domain should be addressed in turn.

i) The belief that the behaviour (alcohol use) is driven by addiction indicates that training to support the practitioners' sense of efficacy and 'perceived control' in addressing this behaviour.

ii) Self-standards (or attitudes) include the belief that 'hazardous use' has little impact on physical health. The belief that users of the service are different to the practitioners with regards to their motivations for, and context of alcohol use would also need to be addressed.

iii) The belief that 'hazardous alcohol use' is a social norm would need to be a component of training.

Recommendations to address these beliefs are discussed in the final section of this chapter.

Major Theme 2.

Beliefs about Clients' expectations of the Stop Smoking Service

In discussing reasons for the lack of inclusion of the complete ABA, all practitioners alluded to the importance of providing a service that met the expectations of clients. The primary focus for practitioners was expressed as delivering a service to support smoking cessation.

'*I don't think that it's [alcohol intervention] appropriate. They'll come along to stop smoking not be accused of being an alcoholic, they won't come back' [S, Older, community practitioner, health promotion background]*

The practitioners' perceptions relating to the expectations of clients were distinguished through three sub themes, *the 'identity' and purpose of the Stop Smoking Service, the nature of the therapeutic relationship*, and *beliefs about the 'journey' of behaviour change*.

Sub theme 1: The 'identity' and purpose of the Stop Smoking Service

The SSS community practitioner role was perceived to be to support patients to stop smoking and to focus on this single objective rather than to promote wider unrelated objectives.

'*I think that as a stop smoking service we wouldn't want people to think that we are nagging them, bombarding them with information on other issues when they have come here to stop smoking, I think that could be a real barrier. [L, older, community practitioner, health promotion background]*

We're not employed to do alcohol services, maybe it's something we should look into.' [S, older, community, health promotion practitioner]

The majority of practitioners espoused a strong identity as a stop smoking practitioner, employed with a specific remit to support change in the specified target behaviour only. For this reason the delivery of ABA for alcohol was reported by most SSS practitioners as inappropriate within their current role.

'I'm not going to analyse their drinking yeah, It's not part of my job, mine is basically to help them quit smoking and make sure the other habits they put into place are good ones.' [S, older, community practitioner, health promotion background]

For those practitioners who acknowledged the need to address multiple health risks in many clients, there were mixed responses. Some regarded the ABA in a more positive light as they felt it might reduce the risk of relapse in tobacco smoking in clients for whom alcohol consumption was a social activity.

'The advice was received quite well, in a positive way, because it brought awareness. It is important because some people don't make the connection (between alcohol and smoking).' [C, older, community practitioner. health promotion trained]

However, where smokers were perceived to be dependent users of alcohol, time constraints were perceived to mitigate against tackling the issue of alcohol use.

'From the user's point of view they haven't come along to stop drinking, they've come to stop smoking…perhaps extend the programme to give use seven or eight weeks to look at alcohol.' [M, older, community practitioner. health promotion trained]

'I think it's like a very long process to get someone back on track for good and just you know that could take years. It depends why you drink I guess, maybe [drinkers] need a counsellor for the rest of their life to sort their issues out.' [A, younger, hospital practitioner. health promotion trained]

Practitioners discussed the training necessary for them to tackle the complexities of alcohol use in their clients. While the training they had received in preparation for Study 1 was considered sufficient to deliver the ABA, they believed more thorough training was necessary to tackle the issues head on.

'*It's [alcohol] included in our basic training like drugs, we know a bit about it but not enough, we're not experts. Well you don't need to be expert but you'd need quite a bit of knowledge, the public aren't stupid, they might have more knowledge than you. Maybe we need an extended programme with extra training.' [S, older, community, health promotion practitioner]*

'*We would need a course to give us more confidence to go out there and work with people hiding behind the bottle, all they want from us is a listening ear and someone to have faith in them, this only works for people who know they are not in control of their drinking and want to do something about it.' [G, older, community practitioner, health promotion background]*

SSS Practitioners with medical training and those working within a hospital setting reported more confidence in their ability to deliver brief advice about alcohol consumption than community practitioners. They did not express the need for fuller training and appreciated the potential utility of referring clients to specialists in alcohol services.

'*because I am not trained specifically about alcohol I don't attempt to give it more focus I more just identify that's it's an issue and refer*

for specialist support' [A, younger, hospital practitioner, health promotion background]

More experienced practitioners working in the hospital environment were also sensitive to the context of alcohol use and to the importance of timing in referring on to specialist services.

'It's difficult, we're all from different backgrounds and practitioners just don't have the information. I heard someone telling a woman who was talking about losing her father and drinking and saying it's not the right time for you, for the smoking job, that's probably right to focus just on smoking. In my other job we'd [Health Visitors] have worked with that lady' [L, older, community practitioner, medical background]

In summary, despite completing the ABA training, the community based practitioners did not believe that they had been equipped with appropriate resources and therefore they lacked confidence to tackle alcohol consumption in being able to meet the needs of their patients. They also reported that they did not consider alcohol interventions to be an appropriate part of their role when supporting patients in the stop smoking sessions. This silo attitude to their own role and the function of the behaviour change service requires closer consideration in a financially constrained NHS in which service developments require the more efficient utilisation of existing resources.

Sub theme 2: *The nature of the therapeutic relationship with clients of the NHS Stop Smoking Service*

Although participants believed that 'problem' drinking affected at least half of the clients of SSS, all practitioners reported concerns about jeopardising the therapeutic relationship between practitioner and client if they raised the issue of alcohol. Practitioners reported both negative experiences in the past and expectations of potential future responses to a dialogue regarding alcohol use.

‘*People get touchy when you talk about alcohol, I don’t know if you’d want to entertain it too much’. [L, younger, community practitioner, medically trained]*

Practitioners expressed the view that their task was to focus solely on smoking cessation. This was the focus expected by clients and formed the basis of their attendance. Giving up smoking is a major task in itself. To include advice about alcohol consumption would be to complicate this task and to introduce a level of judgement about their clients’ behaviour that would be unwelcome and might undermine the practitioner-client relationship.

‘We’re here to be reinforcing, supportive and fun. [In giving up smoking] they feel like they’ve had their leg cut off or lost their best friend. It’s not about our agenda’ [L, younger, community practitioner, health promotion background]

‘We are supposed to be non-judgemental’ [S, older, community practitioner, medically trained]

A client led approach to behaviour change was central to the views expressed by several participants. Clients had chosen to attend a SSS and were not expecting to be challenged about their alcohol use.

‘we will talk to them about smoking as that is what they have come for, if you mention alcohol too much we’ll lose them, they’ll think oh they think we are alcoholics. Mention it a couple of times in the first few sessions as they associate alcohol with smoking. [S, older, community, Health Promotion background]

‘Patient choice is really important – it’s ridiculous to see smoking as a stand-alone issue but if the patient wants to then that’s fine’ [*L, younger, community practitioner, medical background]*

'I wouldn't necessarily know I would raise the issue of alcohol; I do not really raise it unless they raise it with me. I don't do it actively, I let them guide me' [J, younger community practitioner, medical background]

The motivation of clients to change a particular behaviour was described as an essential ingredient for change by some participants – particularly those with personal experience of alcohol dependence in friends or family members. Without an acceptance that drinking has become problematic and a degree of motivation to change, advice and support from the practitioner were unlikely to add value.

'Accepting they have a problem that has to happen first, you know when they stand up in AA they have to admit they're an alcoholic before they can be helped.' [L, younger, community practitioner, medical background]

Not all practitioners believed that it was inappropriate to include advice about alcohol in the SSS. The practitioners with professional experiences of alcohol misuse believed that advice about alcohol consumption was a professional responsibility and that there was some potential to trigger change in this behaviour in addition to smoking.

'it's just getting a window where they are in the right frame of mind to trip back over the line, setting the seed in someone's head. These are really clever drugs they attach to people's lives in every way. So you know they've got the potential to trip their mind back when the seed is planted.' [L, younger, secondary care practitioner, medical background]

Sub theme 3: Beliefs about the 'journey' of behaviour change

The co-occurrence of multiple risky lifestyle behaviours was recognised and reported by most practitioners. The view that the achievement of positive change in one behaviour can also influence change in other behaviours was also alluded to by some practitioners.

'*If they're proper drinking it's so hard for them almost impossible, they can't imagine a day without drinking, it's like us having a cup of tea, they need to stop the drinking first…food is a massive issue, always comes up they turn to it when they're bored. Once they've stopped smoking they feel so much healthier and want to eat healthy, tastes better.' [L, younger, community practitioner, medical background]*

Interestingly, several practitioners appeared to have a 'linear' way of depicting the journey of change in multiple lifestyle behaviours. Implicit in this view is the beneficial effects of successful change in one behaviour increasing the likelihood of successful change in the next. The linear journey was depicted as starting with alcohol reduction, followed by smoking cessation then, changes to patterns of eating and finally increase in physical activity.

'When we stop doing the programme we always talk to them about healthy food and cutting down on a bit of salt. Then they hit the gym. They've generally given up drinking before they start our programme.' [L, experienced, older, community practitioners, medical background]

'they need to get rid of the drugs and drinking first. I have found with addictions smoking is usually the last one to go by the time they get to us...When they finish they do the healthy lifestyle stuff' [L, older, community health promotion background]

Understanding practitioner views of this 'journey of behaviour change' and their perceptions of the key factors influencing this journey (including the role of self-efficacy or 'agency') are worthy of future consideration in the development of multiple lifestyle interventions.

Summary: Major Theme 2

The practitioner-client relationship was reported as central to the advisors role. It appears that although the workforce were deemed to have the appropriate skills (see Chapter 3), in practice this was not enough to support them to deliver the intervention components relating to'identification' and 'communication of risk'. Aspects of the ABA were believed to be likely to have a detrimental impact on the relationship with the client, which, consistent with Deci et al (2008), highlights the need for an intrinsic commitment for practitioners to change their practice, in addition to an external commitment.

It may be that a lack of willingness to deliver the intervention may also be understood in terms of, the importance of the practitioner's environmental context and their emotions and beliefs about the outcomes, as outlined by Michie (2005), 12 Domains framework. The practitioners' perceived role, their outcome expectancies in relation to ABA and their own emotional response to alcohol consumption appeared to outweigh the knowledge and skills acquired through training. This is consistent with previous clinician research which has found only a modest benefit from additional training on the uptake of new practices (Nilsen et al. 2006).

Michie et al (2008) also identified the importance of the professional role and clinicians goals as central to motivation to deliver behaviour change interventions. Practitioners in this study repeatedly reported the imperative to fulfil their objectives of supporting clients to successfully stop smoking on completion of

the SSS programme. Therefore, although there may have been a perceived need to support alcohol reduction in their clients, unless it could be achieved within the boundaries of the objectives of the SSS, it was not reported as a priority.

These challenges inherent in winning the hearts and minds of practitioners therefore include:

i) The desire of SSS practitioners not to do anything that might jeopardise their relationship with their clients.
ii) The overriding goal of SSS practitioners to achieve the objectives of this service.
iii) Their beliefs about the nature of alcohol consumption as a complex behaviour and their views about their own skills and knowledge tackling this.
iv) The impact of the personal experience of the practitioner on their willingness to deliver behaviour change interventions must be addressed and pre-owned prior to delivery.
v) Practitioners' conceptualisation of multiple changes in behaviour as a 'journey' requires further research.

Major Theme 3.

Beliefs about the suitability of the Alcohol Brief Advice intervention as an additional component of the NHS Stop Smoking Service

In addition to relating their views about the social norms associated with alcohol use and their beliefs about the need to assess alcohol consumption in relation to the motivation for use rather than volume, the SSS practitioners also expressed views about the ABA intervention. These views are themed below in relation to comments made in relation to the content and format of the ABA intervention and the NHS context in which the practitioners are working.

Sub theme 1: Perception of the suitability of the content of the alcohol intervention for their clients

Many practitioners discussed their views about the degree to which they considered the ABA suitable in terms of its content (as outlined in chapter 7). Several made unfavourable contrasts with the abstinence approach which formed the basis of the SSS intervention and the 'harm reduction' approach used for alcohol-related interventions. In the SSS, practitioners used a C0 monitor to identify whether self-reported abstinence from smoking was genuine and to reinforce continued abstinence. This kind of objective measure does not form part of the ABA. This resulted in ambiguity for practitioners in assessing alcohol use in their clients, making the identification of the level of alcohol use inexact and reliant on self-report.

'It's harder; it's not as black and white as smoking. We can say don't smoke cigarettes and measure what they've done with the C0 monitor. It's easier for people to drink to excess and deny it, so it's more complicated [J, younger secondary care practitioner, medical background]

There was a view expressed by some practitioners that the complexity of the content of the alcohol intervention should match their perceptions of the reasons for alcohol consumption in their clients. Many considered the ABA suitable only for 'recreational' drinkers – the kind of behaviour common in the general population rather than one specifically tailored to their clients' needs. They therefore felt that it was inappropriate to deliver the ABA in the context of the SSS.

'(laughs) it would probably cover every adult to give this kind of information on alcohol use.' [L, older, community practitioner, medical background]

Those who perceived substantial numbers of the SSS clientele to be engaged in 'dependent' levels of drinking believed a more comprehensive tailored intervention was needed – not least because these clients were unable to control their drinking behaviour, even if the motivation for change existed. These practitioners advocated an in depth exploration of the drinking behaviour of each client, including any broader problems (for example, social isolation). Their views were consistent with the tiered approach to alcohol misusers as outlined in MoCAM (2008).

'They just have no experiences of nice Mediterranean café and fancy lunches, it's so far removed from their lives, there is no swapping for this. You need to really take your time to work out their situation.' [L, younger community practitioner, health promotion background]

'When people have these problems it makes life very chaotic. When people have been involved with things for ages, it's really hard to make changes; it's much more of a chronic problem. The patients I see are getting up and having a drink first thing in the morning and drinking all day every day'. [J, younger secondary care practitioner, medical background]

The content of the ABA as included in Study 1 was not considered sufficiently complex for the majority of their clientele, even as a signposting to other more specialist services. Some however, did believe that the ABA could be developed to be more suitable.

'*With more time we could help more people I reckon with a bit more signposting.' [L, Younger, community practitioner, health promotion background]*

Key concepts such as the importance of planning and self-regulation (Carver & Scheider. 1998) are included in the content of the SSS intervention and in the training of practitioners and are

echoed in the ABA. Cognitive techniques such as these assume a degree of rationality in those engaging in a behaviour change intervention. As many practitioners felt that the lives of clients who were dependent on alcohol were characterised by complexity and a lack of control, it is therefore perhaps not surprising that these behaviour change techniques were perceived to be inappropriate for this population.

'they come back [to the SSS] and they've relapsed yeah, so they learn what the pitfalls are. We use this to plan with them. People will say if I go out I will drink, we just try to say you know what will happen, think about being out and your mate offering you a cigarette, what will you do. If they imagine the scenario they can plan the solution, be better equipped you know [pause] This won't work with people who are drinking all the time.' [S, older, community practitioner, medical background]

Sub theme 2: Perception of the suitability of the format of the alcohol intervention for users of the SSS

In addition to comments about the content of the ABA, some practitioners had thoughts about the format in which information about alcohol consumption should be delivered. Some favoured written information, expressing the view that as relatively high levels of alcohol consumption are common in the general population, and as this type of consumption (in their view) conferred only a low level of risk to health, that it was inappropriate to introduce the topic in a face to face setting. These practitioners reported that instead, they would prefer to make written materials available to enable clients to choose whether or not they would take the information.

'I think that it is really important that we give them written information. If we could give them some written information we could say right, here are some facts about drinking. [G, older, community practitioner, health promotion background]

'I think we should have information available, you know posters or messages, or some leaflets if people want them' [L, older, community practitioner, medical background]

A variety of views were offered about the most suitable format for an alcohol-related intervention. Some expressed the view that due to the complexity of needs in relation to alcohol consumption, the group setting was an inappropriate one in which to raise the topic.

'It's the capacity in the group session, we can't have one person dominating the group talking about their problems with alcohol'. [C, older, community practitioner. health promotion background].

Others expressed the view that dependent drinkers should be offered an intensive tailored intervention delivered by a trained Psychologist or Counsellor on a one to one basis. Other MoCAM recommended interventions for rating levels of alcohol consumption, including relapse prevention and extended motivational interviewing were not mentioned by any of the practitioners.

One medically trained practitioner reported using the ABA in other settings and being accustomed to a model of referring patients for further specialist support. However, despite her familiarity with these procedures did not offer the screening as part of Study 1.

'*I more just identify that's it's [alcohol] an issue and refer for specialist support' [A, younger, hospital practitioner, health promotion background]*

Perhaps the lack of implementation of the ABA, even by those familiar with the brief advice approach, highlights a misunderstanding about the intention for which the ABA was introduced in Study 1, i.e. simply to identify the need for further intervention and to refer patients to specialist alcohol services if

and when appropriate, rather than to provide advice for harm reduction and/or in relation to relapse prevention in smoking cessation.

Despite undergoing training in relation to the ABA prior to Study 1, a perceived lack of the necessary knowledge and skill was described as one reason for not initiating the intervention.

'the main thing we are lacking is information, like we've got on how to run a stop smoking group. I had training and had to study and this made me feel confident. But when you start learning by yourself and not proper training, then it becomes a big barrier.' [G, older, community practitioner, health promotion background]

Sub theme 3. Practitioners' perceptions about the adequacy of available alcohol support services

Despite acknowledgement amongst the participants that specialist alcohol support services existed, there were divided views concerning the efficacy of these services. These views appeared to influence the likelihood of referral for their clients.

Practitioners with experience of secondary care contexts reported positive experiences of their local Alcohol Liaison Services. They reported the experiences of clients as not being stigmatised and the service as suitable for managing the full range of intensity and complexity of alcohol use.

'The Doctor that refers to me usually picks it up. If not and if it becomes apparent that there's an alcohol problem, I always refer them [Alcohol Liaison Service]. He is a very nice guy [alcohol specialist] and is always really happy to just come up and have a chat. It's not always the real alcoholics, it can be just lifestyle advice. They're usually really receptive and take it up when its offered to them.' [J, younger, secondary care practitioner, medically trained]

In contrast, the community practitioners were more sceptical about existing NHS specialist alcohol services, expressing caution about the value of referring their clients. They also appeared to have less knowledge about the variety of services available compared with their colleagues with experience of secondary care.

'I know at AA meetings erm you know they are horrendous places, it might frighten people off.' [L, older, community practitioner, medically trained]

Summary: Major Theme 3

Beliefs about the potentially negative consequences of implementing the additional intervention were influential in the lack of uptake of the ABA by practitioners. Practitioners past experiences of alcohol related services outweighed training and the information received as part of the training for Study 1. Practitioners reported that they would prefer to acquire the capability to support their patients rather than refer them to other agencies.

As with theme 2, the perceived 'relevance' of the content and format of the ABA was a determinant to implementation, however in the context of this theme the assessment of relevance was made in relation to the perceived needs of their clients.

The alcohol intervention which has been designed by the Department of Health, UK promoted as being evidence based and more effective than alternative health promotion strategies such as the availability of leaflets. However, for behaviour change services to be responsive to the reality of health risk behaviours in future, the findings from Study 2 suggest that the training of practitioners and the options for additional interventions require attention and modification.

6.4 Discussion

The major themes to emerge from an inductive analysis of the interviews with the participants were highly informative in relation to why the aims of Study 1 were not achieved. Chief amongst the reasons attributed to the lack of enthusiasm for the ABA were the personal experience and social norms of the practitioners themselves. The practitioners had a clear sense of identity as Stop Smoking Practitioners, and felt that the introduction of additional content in relation to alcohol would jeopardise this identity. For several, their own social drinking would cause them to feel hypocritical in suggesting reductions in social drinking might be beneficial for their clients. In addition, practitioners had their own, often firm views about the 'journey of behaviour change', espousing the view that changes in multiple behaviours should be tackled one by one, rather than in parallel and with alcohol reduction preceding rather than post-dating smoking cessation. Their views on the suitability of the ABA for inclusion as part of the SSS were once again informed by autobiographical experiences and, to a lesser extent, by concepts learned as part of their health promotion training and beliefs about their levels of expertise in relation to alcohol reduction interventions. At a pragmatic level, practitioners also worried that failing to meet clients' expectations of a stop smoking service by introducing the topic of alcohol consumption may damage their relationship with the client, and endanger attendance (and thus the meeting of the practitioners service-related targets).

Having used an inductive analysis of the interview data to develop the themes, a more deductive approach will be used in the rest of this section. This hybrid approach (Fereday & Cochrane, 2006) has been adopted with the purpose of informing recommendations for future research and practice in relation to multiple risk behaviours. As inductive approaches often overlook components of acceptability and feasibility (Procter et al. 2011), a subsequent

deductive analysis has the potential to enhance current understanding about the potential changes to healthcare practice. As part of the process, the results of Study 2 are further discussed in terms of the demographic and professional characteristics of the participants below.

6.4.1 The age of participants

When comparing the views, beliefs and social norms expressed by participants, the age of participants did not appear to account for any clear differences.

Practitioners beliefs about the population norm in relation to alcohol consumption appeared to be consistent within practitioners of all ages. 'Binge drinking' was described as an activity engaged in predominantly by younger people. Social drinking was perceived to be common in all ages and 'dependent drinking' to be more typical of a minority – one which was perceived to relate to disproportionate number of clients attending SSS programmes. In study 1, a third of SSS users disclosed current abstinence, with half of these reporting previous dependence. This suggests a prevalence greater than that observed in national population studies (Health Survey for England. 2012) prior to engaging the with SSS.

6.4.2 The influence of other demographic factors

As the participants in this study were all female, it was not possible to explore gender differences in beliefs, social norms or perceptions about alcohol consumption and the ABA.

Few striking differences were noticed in the norms espoused in relation to alcohol consumption amongst male and female clients, although one older practitioner described 'young girls behaving like men' as a feature of contemporary society. Further study has identified 'double standards', in normative beliefs about alcohol use, despite actual use being similar (deVister & McDonnell.

2011). In the light of differences in official guidance for alcohol consumption for males and females and for differences in social norms about acceptable alcohol consumption between the genders (Lisansky-Gomberg, 1993; Khan et al. 2013), gender differences in the beliefs, norms and perceptions of practitioners in relation both to themselves and to their clients may be a fruitful topic for future research.

This study was restricted to stop smoking services delivered by practitioners in the South East of England. As the social context of alcohol consumption is a theme which has emerged strongly from this research, it would be beneficial to explore the beliefs of professionals delivering programmes in areas of the UK other than the South East and in other countries in order to establish any regional variations that may be relevant to the development of interventions and associated training. This will be especially relevant given the regional variations in engagement in risky lifestyles (ONS. 2011).

6.4.3 The professional background of participants

Whilst no apparent differences in normative beliefs in relation to alcohol consumption were evident in relation to the professional background of the participants, some differences in beliefs about alcohol consumption as a cause or consequence of other problems did emerge. Practitioners with medical training were more likely to report the patient's chaotic lives as an outcome of chronic disease and subsequent isolation rather than the cause. Non-medically trained practitioners reported the cause of alcohol misuse as a lack of agency and inability to control drinking. Furthermore, medically trained practitioners focussed on the potential physiological harms resulting from alcohol consumption, whereas those from a health promotion background maintained a primary focus on the potential social and psychological impacts of alcohol consumption over the long term. The majority of studies of

behaviour change in the context of healthcare delivery have focussed on medical professionals (McTavish & Phillips. 2014). The potential difference between allied health professionals and medical professionals as identified in this study highlights an important difference for consideration in the future development of intervention and training.

Given these tangible differences in beliefs about the causes and consequences of alcohol misuse, it is perhaps not surprising that the medical trained practitioners were more motivated than those with a health promotion background to address alcohol consumption primarily in relation to reducing the physical health risks in their clients. The non-medically trained staff reported greater concern about maintaining an effective rapport with their client than in delivering an intervention with the potential of medical benefits. This patient-directed approach is consistent with the NICE Public Health Guidance 6 (2007) for the delivery of behaviour change interventions. The two core components of beliefs about role and consequence of delivering the intervention, as outlined in Michie et al (2009), should be considered in development of training programmes for this group.

The views of practitioners were also considered in relation to their primary work setting. Those delivering SSS in community settings were more likely to refer to talk about alcohol consumption in a light hearted way as a behaviour typical of the population as a whole. Practitioners offering interventions in secondary care settings treated alcohol consumption and the associated risks more seriously, expressing greater concern about the potential associated risks. This appeared to relate to the experiences of secondary care practitioners of working with alcoholics and to the related training they had undergone about the potential impacts of excessive consumption. Again this difference appears to be due to the prior experience of secondary care practitioners and their more direct exposure to the effects of excessive drinking. Consistent

with the SLT, the direct experience of practitioners may have had a greater influence on their perceptions and beliefs than the training they had received prior to Study 1 relating to the ABA.

6.4.4 Practitioners' own perceptions about alcohol related harm

Practitioners brought their own experiences of alcohol consumption in friends and families to bear when discussing the fine line between controlled and the uncontrolled alcohol use associated with addiction, following the use of alcohol in the absence of adequate resource to cope. These accounts were consistent with theoretical descriptions of dependence or addiction in relation to the associated disruption in motivation and control (West. 2001).

All practitioners challenged the validity of thresholds for classifying drinking as 'hazardous' or 'harmful', however, those who reported personal experiences of alcohol misuse (in family or partners) were more attuned to the potential risks.

The past experiences and social norms appeared to drive the outcome expectancies articulated by participants, particularly for those with non-medical backgrounds. These appeared to 'trump' the information offered in the training sessions for Study 1. This is consistent with Bandura's (1998) Social Learning Theory. Personal or professional exposure and experience appear to be strong determinants of attitudes towards intervention. The SLT has been consistently applied since this study to identify multiple predictors of clinician's behaviours (i.e. Presseau et al. 2014). This study, in addition identified normative influences (TPB) to outweigh knowledge gained in subsequent training. It may be that at heart, the practitioners identified as Stop Smoking Service specialists and that less credence was given to training relating to alcohol use.

The impact of social norms and normative beliefs about alcohol use were consistent throughout the narratives, and appeared more influential than training, for practitioners of all professional backgrounds. Since the time of this study, an application of the TPB to an evaluation of the delivery of behaviour change interventions by professionals has again identified the primary influence of normative beliefs over other factors including self-efficacy and perceived control, in relation to meeting clients' needs (Ramsay et al. 2010).

Previous research on the effectiveness of training has focussed primarily on the role of knowledge, perceived competence and confidence in the delivery of interventions and has perhaps overlooked the role of the normative beliefs of the workforce (for example, Cook et al. 2012). Notwithstanding the possibility that personal experiences and beliefs may play a greater role in relation to alcohol use than other health behaviours (a topic for future research), a consideration of these in the context of training for behaviour change practitioners would appear to have potential to improve the effectiveness of their practice.

6.4.5 The nature of the ABA intervention

In the period before Study 1, practitioners appeared to be motivated to address an additional health risk behaviour as part of their role as healthcare professionals. Resonating with the principles of social learning theory, they agreed that the last session of the SSS would be the ideal time for this intervention, recognising that an increase in self-efficacy following smoking cessation would provide a boost to the chances of clients addressing change in an additional behaviour.

However, in the event, this positive attitude did not transfer into practice, as the practitioners believed either that harmful/hazardous alcohol consumption wasn't an issue for their clients, that the intervention would not be effective, that the

introduction of an additional intervention would compromise their effectiveness and identity as a SSS practitioner, of that it would be detrimental to the ethos and/or success of the SSS intervention they were trained and paid to deliver. Negative beliefs about the consequences of onward referral may have added to the reluctance to deliver the advice and has been identified as a challenge to the implementation of lifestyle screening in other professional groups (Raupach et al. 2014). This suggests that normative beliefs and attitudinal factors defined by outcome expectancies may offer at least a partial explanation of the intention-behaviour gap. The gap between an individuals cognitive decision making processes to make an intention to change and taking steps to perform the desired behaviour have been an important focus for research over may years (Schwartzer. 2008, Sheeran. 2002).

The suitability of the format rather than the content of the screening and communication of risk was presented as a reason for not delivering face to face advice. Practitioners held a belief that information relating to the communication of risk of 'hazardous' alcohol related harm could be delivered in leaflet form. Since the time of this study the large scale RCT to provide the evidence base for the Department of Health reported no significant differences in outcomes between a leaflet and face to face delivery of the ABA intervention (Kaner et al. 2013), suggesting that the advisors beliefs may have been accurate-at least in relation to non-dependant drinkers. The implications of this are explored in the context of further developments in the evidence for brief advice interventions in Chapter 7.

The qualitative nature of this study has facilitated an in-depth exploration of the perceptions and beliefs of practitioners in the promoting the implementation of interventions to address multiple health risk behaviours, and as such has contributed to an existing gap in implementation research (Gravious et al. 2003; French et al.

2012). The findings of this study have been used to underpin recommendations for future research, training and practice. However, prior to moving to this section, the limitations of the study must be considered.

6.4.6 Limitations

The preparations for implementing Study 1 had highlighted the need to involve clinicians in the design of the intervention (Counterweight Project Team. 2008). The manager of the SSS and the practitioners themselves were consulted prior to initiating the study. However, with the benefit of hindsight, practitioners were consulted in a group setting, and thus may not have been offered an appropriate forum in which to discuss their reservations and concerns.

This study was limited to the accounts of eight female practitioners and thus it was not possible to examine possible gender differences in response to the introduction of the ABA. In addition, the study focussed perceptions of introducing brief advice (designed to raise awareness of health risks and to signpost for specialist support) to a 'gold standard' protocol designed to bring about and monitor changes in one health behaviour. The experiences of this particular combination of interventions should not necessarily be generalised to the potential of combining other behaviour change interventions. It may also be that alcohol consumption evokes a particular set of beliefs and social norms in practitioners that may not generalise to other health behaviours such as diet or exercise.

Research included in the systematic review that preceded this study, and conducted since (Marmott & Bell. 2012) has highlighted the relationship of social gradient in predicting health behaviours in target populations. The socio-economic status of the clients in Study 1 was not assessed beyond employment status. Neither was it explicitly raised by practitioners in Study 2, although there

were continuous references to the users' chaotic and 'different' lives. It may however be that the population of clients in this study was not typical of others attending SSS, affecting the generalizability of the results of this second study.

Given that the researcher had been involved in the delivery of the ABA used in this study was not naïve to research and practice in this field (see reflective chapter) the analysis could not have been purely inductive. Measures to counteract this, including peer review of the transcripts and the process of analysis, were adopted to reduce this bias, however, in future; it may be preferable for researchers with no previous experience of this sort to conduct the interviews and to complete the analysis.

6.4.7 Recommendations for future research, practitioner training and practice

This study has considered in depth practitioners' perceptions of the feasibility of implementing a brief advice alcohol intervention as an addition to the SSS programme. Recommendations based on the findings of this study have been developed with the aim of guiding future work in this field. The first set of recommendations relates to the training of practitioners, and the last relates to the work of researchers and those involved in the design of interventions to promote change in multiple health behaviours.

1. The Training of Practitioners

(i) Beliefs about alcohol-related risks and how to communicate these to clients.

When compared to 'official' guidance, practitioners expressed beliefs that underplayed the potential consequences of alcohol consumption in the context of social drinking. Levels of drinking classified as 'hazardous' in the ABA, but reported as occurring in social contexts was condoned. Rather than a distinction between

‘social drinking’ and ‘dependent drinking’ (related to addiction), information is needed about the continuum of alcohol-related risks, this is absent from MoCAM guidance. Training packages could include more information on the nature of addiction and effective methods to address these (i.e. West. 2011).

(ii) The purpose of brief advice interventions

When training practitioners to deliver brief interventions, the nature and purpose of the interventions, i.e. screening, communication of risk, referral should be emphasised. The practice of the intervention should be limited to these components. Where interventions are being ‘enhanced’ to include further behaviour change techniques, and the rationale for this approach should be communicated. Had this strategy been adopted in the current study this may have helped to ensure that practitioners did not interpret the intervention as being in some way in competition with the SSS, but merely as a step to another behaviour change. This is also consistent with studies published since this research which have highlighted an absence in understanding of the specific aims of Tier 1 and 2 interventions as a means to access specialist support via referral pathways as a barrier to implementation of brief advice for smoking (Raupach et al. 2014).

The potential of developing the now widely established smoking cessation services to incorporate interventions to address other lifestyle behaviours has to date been restricted to small scale studies (Ussher et al. 2012). These studies have had mixed results.

iii) The impact of the practitioners’ own beliefs and experience and their perceptions of social norms

It may be that the over-riding social norm of alcohol consumption as ‘acceptable’ in social contexts may mean that effort is required

to change widely held alcohol-related social norms at a population level (Bryden et al. 2013) before it is feasible to pursue alcohol reduction programmes for those identified as at risk. In any case, future research and intervention development should consider social norms and the impact on healthcare professionals' behaviours and practices. In addition macro approaches to addressing the social norm are required.

There is a need for further exploration and understanding of a separation of 'them' (the clients) and 'us' (the practitioners) in relation to the application of social norms and subsequent behaviour towards clients. To be able to offer effective support for clients, practitioners will need to 'buy in' to the potential harms of alcohol use (even in social contexts) in their clients, even if they choose to engage in these patterns of behaviour themselves. More education regarding the physical and psychological risks of alcohol consumption should be included in the training of health professionals. A by-product of this training may also constitute an effective intervention for the practitioners to begin to address their own alcohol use.

Several of the practitioners in this study espoused the view that changes to more than one health behaviour should happen in the form of a journey, addressing one behaviour after another – rather than interventions to tackle multiple behaviours concurrently. The 'journey' encompassed change in relation to alcohol, then smoking, followed by eating and exercise. This view was influenced by their beliefs about the relative level of risk associated with each of the behaviours and their beliefs about the motivation and capability of their clients. Should there be a shift in policy to interventions to address multiple behaviours concurrently, there will also need to be a programme of education aimed at changing the hearts and minds of practitioners.

(iv) The need to broaden practitioner perceptions of their professional role and identity

The majority of practitioners reported their current role as relating exclusively to effectively delivering the SSS. Many did not feel their knowledge extended to a sufficiently detailed understanding of alcohol consumption and the specialist services available to address this particular behaviour. Some (particularly those with predominantly community-based rather than secondary care experience) expressed scepticism about the efficacy of available services. Moreover, some practitioners felt that referral to another specialist service would affect the practitioner-client relationship in the context of SSS in a detrimental way. This lack of understanding of available services had not been apparent in training prior to Study 1 and should be addressed in future work.

The relevance to practitioners of achieving success of delivering any enhanced or additional intervention should also be considered. In a target driven workforce, the introduction of any additional element that might be perceived as reducing the chances of achieving the targets of the original service may be detrimental, as in this study.

2. The design of future interventions

The results of this study highlight that the preparation for future studies should promote a high level of engagement with health professionals at all stages of the design process.

Pre-intervention training should include explicit information on the interplay and multiple risks caused by engagement in more than one risk behaviour. In addition training should promote the relevance of expertise in promoting change in more than one health behaviour.

This broader perspective should be reflected in the roles, job specifications and objectives of the public health workforce in the future.

In this study many practitioners expressed the view that information about health risks of particular behaviours should be presented in a written leaflet form. Yet, health literacy varies with social gradient and those at the lower end of the socioeconomic curve have the greatest likelihood of engaging in multiple risk behaviours (Nuttend. 2000). This preference of practitioners for written materials instead of a face-to-face intervention may offer some explanation of the failure of health services to provide effective support to those who may actually have the greatest need. This should be further investigated in future research.

The perceptions of the practitioners that dependent levels of alcohol consumption were common in SSS clients was not borne out by the results of Study 1, however some patients did add notes to the closed ended questionnaires referring to a current period of abstinence following previous alcohol dependence. Further study is required to establish past and current alcohol use in clients of the stop smoking programmes.

The tools used to assess the levels of engagement in a target health behaviour (for example, in the case of the ABA, the AUDIT tool), should be carefully considered in relation to other behaviours including diet, the use of validated tools have been criticised, as they have led to insufficiently detailed pictures of clients' patterns of behaviour, and may undermine attempts to deliver appropriately tailored interventions (Raja et al. 2008). Thus it would be prudent to assess past patterns of behaviour in addition to levels of engagement immediately prior to an intervention.

The SSS practitioners favoured the use of objective measures to check on the self-report of clients (the C0 monitor used in the

SSS). The possibility of supplying an objective measure of the health behaviour in question is also likely to be favoured by practitioners in the context of promoting change in behaviours other than smoking. Although alcohol mg% breathe tests are available and were used for alcohol intervention studies outlined in the systematic review (Arroyo et al. 2003), understanding of the screening tools and their rationale to support the intervention as outlined above must be considered, prior to adoption of these methods.

Delivery of training in the Health Services costs billions of pounds each year (NHS Costs and Exemptions, 2008). The insights gained in this study offer useful understanding into how training might be enhanced in the future.

These recommendations will be addressed further in Chapter 7, the synthesis of findings across both studies.

Chapter 7

Synthesis of Findings

7.1 Overview

In the context of evidence that engagement in multiple health risk behaviours is common in the UK population (Khaw et al. 2008) and of interventions focussing on behaviour change in relation to single risk behaviours, the first aim of this research programme was to test the feasibility of addressing change in more than one behaviour during one episode of contact with a behaviour change service (Study 1). This study was also designed to focus on the potential role of self-efficacy and outcome expectancies in the process of changes in more than one behaviour. In recognition of the importance of engaging practitioners in relation to the content and delivery of interventions, Study 2 explored the beliefs and perceptions of health practitioners about the feasibility of delivering the enhanced intervention.

This final chapter comprises a synthesis of the results in relation to each aim and a consideration of these results in the context of research evidence published since the completion of this research. The limitations of the research programme are outlined, and the implications for practice and policy and recommendations for future research are discussed.

7.2 Addressing multiple health risk behaviours

Informed by evidence pointing to the prevalence of multiple health risk behaviours, and by research evidence and professional opinions concerning the co-existence of risky levels of alcohol consumption and smoking, the combination of existing smoking and alcohol interventions seemed a logical focus for Study 1. Stop smoking practitioners had estimated that approximately 50% of clients attending the SSS were dependent alcohol users, either at the time of

enrolment, or at some time in the recent past, In the event, only a small proportion of smokers attending the SSS reported alcohol consumption at levels considered to comprise a health risk, with higher rates of alcohol abstinence than expected from population figures. These unexpected figures were explained by the SSS practitioners as the result of clients abstaining from alcohol at the time of study, following previous periods of dependence. The AUDIT tool used in this study (and more widely as part of the roll out of the ABA intervention) failed to pick up patterns of previous alcohol consumption, and thus a full picture of the co-existence of smoking and alcohol consumption was not captured. The bluntness of this tool (and others like it) should be considered both in future research and in health promotion practice.

From the vantage point of further experience, the choice of smoking and alcohol consumption as the focus for a multiple behaviour intervention may not have been the most suitable for an initial feasibility study. Prochaska & Prochaska's (2011) review has also recognised that these behaviours are distinctly different to other lifestyle behaviours and have reported that they should be treated as such. In their 2011 review, three clusters of behaviours were outlined, these were: 'energy balance behaviours, physical activity and diet', 'addictive behaviours, smoking and drugs', and 'disease-related behaviours'. Consistent with the identification of these clusters, in Study 2, practitioners also indicated that clients attending the SSS may not be typical of others enrolling on behaviour change programmes. The practitioners believed that a disproportionate number of this client group lived in challenging social circumstances and stress in other areas of their lives had resulted in smoking and for some, excessive alcohol consumption either at the time of study or in the past. Practitioners talked about smoking and alcohol use as 'coping mechanisms' adopted in response to stress. The addictive nature of these behaviours reduced the level of control clients had over these behaviours, and to their inability to tackle more than one

health risk behaviour at any one time. Although Study 1 did not generate any data to support these perceptions, further research since the time of this study (Prestwich et al. 2014) has verified the links between stress and engagement in lifestyle behaviours associated with risks to health.

Prochaska & Prochaska's (2011) review of randomised controlled trials identified a lack of evidence for the effectiveness of interventions, reported as a consequence of design flaws in measurement. Thus the question of whether multiple health behaviour change can be initiated and maintained through the mechanism of a single intervention remains unanswered. Despite this lack of evidence however, integrated lifestyle services, which are characterised by a single point of access to needs based interventions, have been outlined as the vision for development and future delivery (Colin et al. 2014).

The role of psychological constructs in multiple behaviour change

On the basis of literature reviews, the psychological constructs of self-efficacy and outcome expectancies were chosen as key variables in Study 1. Insufficient data were collected to allow any meaningful analysis of this data, although interestingly, practitioners' responses in Study 2 indicated that they believed self-efficacy to play a role in successful smoking cessation and that it would also be key in the process of changing multiple health behaviours. The constructs as outlined in this study remain central to behaviour change literature, however, the focus of current literature is on the techniques for change, including the application of the taxonomy of behaviour change (Abraham & Michie. 2008), rather than on key constructs in process and outcome.

Nevertheless, research into obesity management has identified co-action for secondary behaviour changes where there are positive outcome expectancies of change (Johnson et al. 2014). Positive

outcome expectancies and self-efficacy in Johnston et al's study were considered with regards to the intervention component; decisional balance, and were reported for just one physiological outcome – weight loss, despite requiring changes in a number of behaviours (i.e. nutritional and physical activity changes). Further studies have identified techniques including self-monitoring/self-regulation (to assess progress, self-efficacy and outcome expectancies), social support and planning as techniques essential for change (Bartlett et al. 2013). These current, practical approaches to intervention development should be enhanced to include measurement of changes of these constructs known to be important for change, including social support, and coping ability as outlined by the practitioners in Study 2. Coping ability is likely to be particularly important in interventions where effective change is dependent on self-regulation and decision making skills; this is as stress is recognised ad limiting the cognitive agility required.

The role of health practitioners' beliefs in the implementation of interventions

The failure of Study 1 and results of Study 2 have highlighted the key role played by the beliefs and perceptions of practitioners in the successful implementation of any intervention of this nature. Several themes emerged in the course of Study 2, all of which are likely to have contributed to the failure in implementation of the intervention. These included practitioners' perceptions of prevailing social norms of alcohol consumption and their own interpretations of levels of health risk associated with drinking, their own consumption patterns, their beliefs about the vulnerability of smokers to other addictive behaviours including alcohol consumption, doubts about the appropriateness of the content of the brief alcohol intervention, their identity as stop smoking specialists and their perceived lack of expertise in behaviour change in relation to alcohol consumption, together with the imperative of achieving stop smoking targets within the SS service.

Practitioners' beliefs about the focus for intervention and the content of the ABA

As outlined above, several practitioners expressed the view that although they were not averse to the idea that more than one health risk behaviour could and should be addressed in a single intervention, smoking and alcohol consumption were not suitable for this approach. They believed that hazardous levels of alcohol use required multiple approaches to interventions, including those at population level (such as health education about the risks of alcohol consumption), interventions targeted at those most at risk for these health behaviours as the result of their challenging social situations, as well as specialist individual services. The practitioners felt that as an addictive behaviour typical of those with complex social challenges, alcohol consumption could not be addressed by communicating risk information and offering referral to specialist services, as is typical of lower Tier interventions such as the ABA. It is certainly the case that the Tier 2 intervention in which the practitioners were trained in preparation for Study 1 did not contain any elements that addressed potential complex social issues in potential clients (MoCAM. 2006). This omission should be considered by those implementing alcohol related behaviour change initiatives and by intervention developers in future. Interestingly, however, practitioners did express the view that multiplicative interventions using less complex interventions would be appropriate for other behaviours, such as diet and exercise.

The practitioners also believed that successful smoking cessation was less likely in those engaging in alcohol misuse. This view is supported by Dawson (2000) who highlighted alcohol dependence and the context of dependence as affecting alcohol user's chances of successfully initiating and sustaining sobriety and changes in other health behaviours. However, despite an acknowledgement of the relevance of tackling alcohol consumption in smokers, the

practitioners expressed the view that this should be done prior to attending the stop smoking service. This perception of an appropriate 'journey of behaviour change' is one worthy of future research. For clients who would also benefit from changes to diet and an increase in exercise, practitioners felt that these changes should be introduced after the smoking cessation intervention.

With hindsight, the view that an over-reliance on alcohol should be successfully tackled before moving on to smoking cessation may also have been coloured by the targets for smoking cessation in clients of the service practitioners had been set and were struggling to meet. In discussing the pros and cons of the ABA, it was clear that short term quit smoking rates had remained their primary objective in interactions with the clients. Furthermore, in the course of the interviews in Study 2, practitioners communicated a strong sense of their primary identity as a 'Stop Smoking Practitioner'. Although they clearly had skills relevant to promoting change in a variety of health risk behaviours, their confidence appeared to be specific to their ability to promote smoking cessation. NICE Guidance on Individual Behaviour Change 49 (2014), recognised the potentially limiting consequence of perceptions about a professional role and the relevance of broader training in behaviour change for healthcare practitioners generally. Further training will need to emphasise the transferability of behaviour change skills, in addition, the practice of imposing targets for change in single behaviours will need reviewing if interventions to tackle more than one health risk behaviour are to become the norm.

The efficacy of brief interventions

In supervision sessions following the completion of the training prescribed by the Department of Health to effectively deliver the ABA (MoCAM), none of the practitioners questioned the appropriateness of the Tier 2 intervention, in promoting change in alcohol consumption. However, in Study 2, when discussing the failure in implementation of this intervention, practitioners were critical of the ABA – which in their

opinion, was inappropriate in promoting change in clients for whom alcohol misuse was frequently symptomatic of complex social issues. While these complex social issues are not typical of all for whom the ABA might be thought of as a suitable intervention, this calls into question the issue of the broader effectiveness of the ABA recommended by national guidance at the time of study.

Effectiveness studies for behaviour change interventions are carried out by researchers within rigorous, controlled research conditions. The challenges of transferring the initial effectiveness studies of the ABA into practice have been verified in review of this intervention since the Study 1 *(*Finnel. 2013; Jonas et al. 2012*).* Saitz et al, (2014) identified the lack of evidence for ABA in translating effectives studies into intervention implementation. This brings into question the level of ecological validity of brief interventions when applied to real-world settings and delivered by existing health care personnel. Atempts to utilise the same intervention at the frontline for both treatment and prevention has been criticised, due to the widespread variance in service users needs (Saitz 2014*).* However, the reasons for the failure of implementation studies remains unknown, however the absence of detail about the exact content of the intervention when delivered may offer some explanation. A large scale RCT examining impacts of brief interventions for alcohol harm reduction using the ABA model employed in this study (Kaner, at al. 2013), has failed to demonstrate significant change. This failure has been attributed to a lack of clarity of the content and quality of the intervention which was delivered by the healthcare professionals.

An important component in achieving change in alcohol consumption has been identified as ‘supported self-monitoring’ (Michie et al. 2012). In addition, there is some more recent evidence for the efficacy of brief motivational interviewing techniques from effectiveness studies (Fanchi et al. 2012; Mortens et al. 2014), however, as yet, evidence from implementation studies is lacking. The effectiveness of the ABA

in practice clearly requires more investigation. It may be that it's suitability is confined to a Tier 1 intervention only ie, communication of risk information, for example, in the form of a leaflet, (Kaner et al. 2013), designed to promote a self assessment of the behaviour in question (McCambridge & Kypri. 2011).

Another interesting feature about the content of the ABA to emerge in interviews with practitioners in Study 2 was that levels of alcohol consumption defined as 'hazardous' within the ABA and in the associated training were believed by advisors to be acceptable and typical of a population norm – a feature of contemporary society, and for some, typical of their own alcohol consumption. These perceptions may have contributed to a failure in practitioners to accept that this level of alcohol intake does in fact comprise a health risk (whether to themselves or to their clients) and to their lack of willingness to 'preach' to their clients about reducing levels of alcohol consumption which practitioners consider to be within normative limits. It is interesting that these concerns were not raised during supervision sessions after the ABA training and before the initiation of Study 1. Perhaps it was considered more important to offer these opinions as part of a justification for not having delivered the intervention, than it was to raise this as a concern prior to implementation.

The ABA was originally developed using the principles of motivational interviewing. Advances in thinking about theory and frameworks relevant to behaviour change, include the COM-B Model (Michie et al. 2011[a]). This highlights the importance of the capability of the client, the opportunity to achieve changes in behaviour as well as the motivation to change in optimising the chances of effective behaviour change resulting from an intervention. Throughout this research programme, practitioners' beliefs about the perceived capability of the target client group and opportunities for change have posed challenges to the delivery of interventions. Had the research been driven by interventions based on the COM-B approach, these

challenges may have been identified earlier in the process. NICE Guidance for Behaviour Change 49 (2014) verifies the importance of considering capability and opportunity in efforts to address health inequalities.

In sum, Study 1 failed to generate meaningful data with which to address the question of the feasibility of delivering an intervention to tackle more than one health behaviour in a single client engagement with a behaviour change service. This experience and the interviews with practitioners in Study 2 have offered several reasons for this failure. The lessons learned in relation to future research are summarised below, as are the implications for policy and practice. These are tempered by the limitations of the current research. The majority of these have been explored in detail above and in previous chapters of the thesis. However, a reminder of the particular shortcomings are highlighted below.

7.3 Limitations of the research programme

The significant limitation of the study was the inability to implement the original repeated measures full study design as the result of significant delays in the approvals process, in particular challenges inherent in achieving ‘sign off’ from all the necessary Research and Development authorities at the time of study. Consequently, the scope and timescales for Study 1 were drastically reduced, making it impossible to achieve the original data targets or complete the planned data analyses. These changes also led to potential biases in the population of SSS clients available to the study, and in the health practitioners available both to steer the implementation of Study 1 and, latterly, to contribute to the interview data collected in Study 2. The SSS clients and practitioners were recruited from two services in one geographical area - the south of England. Additionally, all practitioners taking part in the study were females. This gender bias may have skewed the outcomes of both studies. It is very possible, for example, that the social norms expressed in relation to alcohol consumption may be

subject to gender bias. These limitations should be borne in mind when considering the generalizability of the conclusions drawn from this research programme.

The drastically reduced scope of Study 1 included the removal of the repeated measures and follow up elements. Thus it was not possible to examine the role of self-efficacy and of outcome expectancies in relation to behaviour change in more than one behaviour. The decision to enhance clarity about the components of the interventions through the bolting on of a Tier 2 intervention to an existing Tier 3 service also limited the scope of the study. Future research should also consider the potential differences of this approach compared with a more fully integrated intervention. The study did not investigate multiple lifestyle risks but instead focussed on two behaviours. The focus of the intervention was on two health risk behaviours which for many clients, may involve elements of addiction. Had the study focussed on different lifestyle behaviours (for example, diet and exercise), the results may well have been very different.

Practitioners accounts highlight the importance of coping and challenging social environments as characteristic of their service users. The absence of measures to assess these additional factors in the baseline questionnaire prevented further understanding of the potential relationship between stress and coping behaviours in this population. The final sample size was not large enough to enable any conclusions about the psychological constructs of self-efficacy and outcome expectancies, other than in relation to the perceptions of practitioners of the relevance of self-efficacy in relation to smoking cessation. Future larger scale studies should adopt a RCT design to facilitate the establishment of the role of psychological constructs and other key variables in the behaviour change process.

7.4 Implications for practice, policy and research

Despite these limitations, the experience of conducting this research programme and the findings of Study 2 have implications for future practice, policy and research. These relate to the training of health professionals, the implementation of behaviour change interventions in NHS and community health settings, considerations for health policy makers and health psychologists working in the field of health behaviour change.

Implications for the training of behaviour change practitioners and for practice:

Despite the lack of evidence to support the Transtheoretical Model of Change (TTM) (Prochaska & Veliar. 1997), and the mixed evidence for the efficacy of motivational interviewing techniques (MI) (for example Vogt et al. 2008), the training of behaviour change practitioners in relation to the implementation of interventions has relied heavily on the TTM and MI techniques to date. The findings from this study would support a shift to the COM-B model (Michie et al. 2011[b]) which may be more appropriate in supporting health care professionals to develop interventions for patients across the spectrum of behavioural change. This framework has been particularly useful in helping practitioners appreciate barriers to implementation in individual clients, in addition to highlighting the importance of personal motivation for implementing changes (Michie et al. 2005).

Study 2 clearly demonstrated that the personal beliefs of practitioners played a significant role in detracting from their willingness to deliver the additional intervention. These beliefs included social norms in relation to their own alcohol consumption and that of their clients. Considering the findings of this study future training of practitioners delivering alcohol related interventions (and conceivably, other health risk behaviours) could take account of the need to deconstruct social norms and to challenge their own beliefs about ‘social’ drinking and

levels of health risk. Although this study comprised a small sample, this recomendation is consistent with the recent publication of guidance for the development of the public health workforce, which recommends addressing health beliefs in practitioners, both to encourage the practitioners to achieve health gains for themselves as well as their clients (Royal College of Physicians. 2012), but as yet, has not been taken into account in the National Identification and Brief Advice for Alcohol Harm Reduction Training, which forms the basis of the ABA used in Study 1. Workforce health programmes, which consider tailored and targeted approaches to individual and cultural change are showing promising outcomes on behaviour (Cancelliere et al. 2011), in addition, studies have reported the application of the COM-B domains of behaviour change as a framework for promoting change in healthcare professionals themselves (e.g. Curran et al. 2013; Boscart et al. 2012; French et al. 2012; McSherry et al. 2012). This seems a promising development in the pursuit of more effective intervention.

However as yet, there is no clear evidence of the impact of these changes on the ability of practitioners to offer more effective support to their clients.

This research also highlighted differences in the views of practitioners according to their professional backgrounds and associated skill sets and the setting within which they had previously delivered behaviour change interventions. Rotation based learning sets in which practitioners gain experience of different contexts and client groups could be considered as an approach to vary the exposure of practitioners.

In addition, the targets used to assess performance in behaviour change practitioners may be detrimental to the implementation of additional behaviour change interventions within existing services and in the broader development of interventions to address multiple health risk behaviours. This study has illustrated the detrimental effect of

using smoking cessation rates as a performance target on the introduction of an intervention perceived to be unwelcome to the clients of the SSS. The management of services could reflect broader public health objectives to guide staff objectives, performance reviews and personal development plans.

Implications for policy:

This research programme has highlighted the powerful effect of social norms on the beliefs and practice of health professionals. Changes at policy level are necessary to challenge these norms. In instances in which fiscal and other policy level approaches have been adopted, positive outcomes in relation to rates of health risk behaviours have been observed (Das & Horton. 2012) and there is growing evidence that changes to the environment to address habitual, automatic processes which are characteristic of lifestyle behaviours is beneficial (Marteau et al. 2012). In relation to alcohol consumption, following a review of the potential reductions in related harms to physical and mental health (Randy et al. 2010), fiscal and taxation measures have been taken at government level with the aim of reducing consumption at a population level (Michie et al. 2011[a]). Although these moves have not been universally popular, it is increasingly recognised that these population level approaches (in addition to interventions to support behaviour change at an individual level) are necessary in order to achieve the desired scale of change (Pechey et al. 2014). It should, however, be noted that the relative impact of fiscal measures on alcohol consumption has been affected by differences in the income of consumers (Randy et al. 2010), with those in the higher income brackets being unaffected by such policy changes. Therefore, further initiatives will be necessary to address change across all population groups.

7.5 Recommendations for future research

Although this research programme failed to answer two of the three major questions posed at the outset, a number of recommendations

for future research can be tentatively proposed as the result of the experience of Study 1 and from the results of Study 2.

In future studies examining the potential of multi-behaviour change, careful consideration should be given to which behaviours to combine in an intervention, and the potential relationships between patterns of behaviours relating to each. Is it the case (as espoused by practitioners in Study 2) that some behaviours (particularly those with an addictive component) should be tackled in isolation, whereas others (eating and exercise) could be combined in one intervention. The practitioner view that for clients dealing with complex social issues, there was an appropriate 'journey' of behaviour change (i.e., alcohol consumption, smoking, diet and exercise) should be investigated.

Future studies should evaluate the advantages and disadvantages of adopting an additive approach to interventions (by combining existing interventions), compared with developing new integrated interventions.

More research is needed to identify the key psychological constructs and processes playing a part in successful change in multiple health risk behaviours. In addition, the potential impact of the social context of behaviour change service users on achieving change in health risk behaviour(s) require more research to improve understanding and optimise outcomes.

Further work should examine the role of beliefs and perceptions of health professionals delivering behaviour change interventions focused on behaviours other than smoking and alcohol consumption. The impact of these beliefs and perceptions on the outcomes of the interventions should be assessed. The efficacy of future training to challenge beliefs in practitioners which may act as barriers to the

delivery of effective behaviour change interventions should be evaluated.

7.6 Conclusion

There is a growing appetite to identify effective solutions to the current levels of health risk in the UK population resulting from engagement in multiple risk-taking behaviours. Despite the failure of Study 1 of this research programme to address questions relating to the feasibility of promoting change in more than one health risk behaviour in a single contact with health promotion services, the experience of conducting this research, together with the results of Study 2 have highlighted that achieving changes in practice will require a systems approach. In addition to a programme of research to clarify the individual and social factors influencing engagement with multiple health risk behaviours and implicated in successful change in these behaviours, efforts to reduce health risk at a population level will also require changes to policy and practice.

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Appendicies

Appendices

Appendix 1 Hardeman framework and intervention design

The study aimed to explore the feasibility of a secondary behaviour change intervention within an existing lifestyle behaviour change programme. The rationale for this design and selection of behaviours is illustrated in Table 1 alongside the Hardeman framework for the design of intervention studies.

Table 1 Design of the Multiple Behaviour Change Intervention Feasibility Study

Hardeman (2002) Components	Study Design
a. Health outcome/ Reason for importance	Significant reduction in length and quality of life (multiple impact on risk) in those who engage in more than on lifestyle risk taking behaviour. There is insufficient understanding of the level of engagement in more than one risk behaviour and the impact that this has on behaviour change. There is insufficient understanding of the psychological process of behaviour change, identification of mastery as a catalyst for further behaviour change would provide evidence for a more efficient use of resource within the NHS. Healthcare professional's implementation has been identified as important for valid intervention studies. Understanding of the changes which are required to current practice will facilitate future application.
b. Determinants	Socio-demographic gradient and psychological precursors.
c. Target population	Users of lifestyle behaviour change services. Providers of lifestyle behaviour change services.
d. Target behaviours	Tobacco smoking and alcohol misuse.
e. Theory based determinants	Social Learning Theory and the Theory of Planned Behaviour.
f. Measures to assess behavioural determinants	Validated measures of internal and external outcome expectancies and self-efficacy.
g. Techniques to support behaviour change	Gold Standard Stop Smoking Service and Royal College of Nurses accredited Department of Health alcohol harm reduction intervention.
h. Important factors for implementation	Advisors perception of feasibility of intervention.

Health outcome

The devastating impact of modifiable lifestyle behaviours on morbidity and length of life have been outlined. This study was designed to explore the psychological factors important for intervention to support changes in more than one risk behaviour which are related to these poor physiological outcomes.

Determinants.

There is little known about the incidence of which risk behaviours cluster. Understanding the prevalence of engagement in more than one risk behaviour and the impact on behaviour change outcomes will be essential to inform the resources required for service development.

Target population.

Users of one lifestyle behaviour change service were selected for this study. Prior to designing the study, target behaviours were reviewed. Smoking cessation (primary behaviour change) and alcohol harm reduction (secondary behaviour change) were selected due to the transparency of the guidance and subsequent standardised content of the interventions.

The importance of objective and measureable intervention components with the use of biochemically validated outcomes has been overlooked in previous studies (Hardeman. 2002). The lifestyle behaviours selected for this study were the NHS Gold Standard Stop Smoking Services (West et al. 2003) which was the only current lifestyle intervention to fulfil the requirements of a replicable programme. A national programme with a user flow in excess of 671,259 a year (2008/09) provides the opportunity for a programme which may be scaled to address population needs. In addition the programme is delivered by a group of advisors who have undertaken standardised nationally recognised training.

The Department of Health, UK Identification and Brief Advice for Alcohol Harm Reduction was selected as the additional behaviour change. It is the only lifestyle change supported by standardised training, which is delivered via an e-learning tool. This makes it an efficient, easily accessible and replicable intervention.

Consideration of these target behaviours will enable the study to demonstrate the impact of two interventions on two behaviours and subsequently two outcomes.

Review of an alternative combination of eating and physical activity behaviour would have been targeting the same outcome goal, weight loss. This would have biased the result of the study which aimed to explore the impact of the SLT, 'mastery' on more generic behavioural changes. In addition, there is no standardised training for these behaviours.

In conclusion the use of standardised training packages for smoking and alcohol harm offered greater rigour in exploration of the process of behaviour change.

Target behaviour (and objective measures)

The target behaviour for the intervention was alcohol use and smoking cessation. An objective measure of smoking status was achieved via the use of carbon monoxide monitoring. This is a standard procedure for the Stop Smoking Services. Alcohol misuse was measured using validated alcohol screening which was designed to identify levels of harm via self-reported alcohol use. Changes in the outcome expectancies and self-efficacy towards changes in smoking and alcohol use were mentioned throughout. Hierarchal logistic regression analysis would be applied to explore changes in outcome expectancies and self-efficacy to engage in changes. Smoking cessation and alcohol harm reduction were the primary outcome measures.

Theory based determinants (and specified intervention points)

Consistent with the NICE guidance for behaviour change interventions (2007), the study design was underpinned by theory based determinants. These were derived from the SCMs of behaviour change. Application of the SLT informed the timing of the second intervention delivery. Following the achievement of mastery, achieved following successful cessation of one behaviour, patients were supported to consider further behaviour change. At baseline, measures of the SLT included attitudes defined by outcome expectancies, self-efficacy and intention for both smoking and alcohol consumption.

Measures to assess behavioural determinants

The SLT components, outcome expectancies and self-efficacy were recorded with standardised validated scales. These are the psychological measures of behavioural determinants. Behavioural outcomes were also measured using validated scales of smoking and alcohol use.

Techniques to support behaviour change

The study is designed to measure changes in the outcome expectancies and self-efficacy to address smoking cessation and alcohol. This will explore if there is an impact of mastery of one behaviour change on the self-efficacy to achieve further change. The intervention was to support implementation intention to reduce alcohol use. The study designed to repeat each measure prior to engagement in the behaviour change programme and following successful completion. Follow up measures explored the outcome expectancies and intention to engage in further changes. This examination of the process of change was used to inform if it is feasible to use stop smoking services to deliver effective interventions for alcohol harm reduction.

Important factors for implementation (system requirements)

The MRC framework highlights the importance of applying a logic modelling phased approach to understanding the feasibility of intervention design. Therefore this study includes a process evaluation. This applied repeated measures to identify changes in self-efficacy, outcome expectancies and intention to change. This would provide insight into the suitability of the use of an existing lifestyle programme to deliver the intervention. This enabled the application of the SLT to test the hypothesis that mastery (successful achievement of one behaviour change) will enhance self-efficacy to engage in further behaviour changes. If this is the case the use of existing services will prove an efficient use of behaviour change resources.

Feasibility of offering an enhanced behaviour change intervention in the existing healthcare system

Consistent with the identified frameworks for complex intervention, there is a requirement to understand the factors associated with effective implementation. It is surprising that process and outcome implementation

studies considering the psychological factors for this have not before been the focus of the primary study (Hakkenes & Dodd. 2008). An exemplary approach to intervention research has been identified as including site and clinician level understanding on process and outcomes, (Glasgow et al. 2004). Glasser & Strauss (2006), identified 5 areas which have various levels of importance of implementing changes, causal, interactional and outcome beliefs. The clinician level understanding can be considered using a qualitative research design.