A realist review of evidence to guide targeted approaches to HIV/AIDS prevention among immigrants living in high-income countries

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Abstract

HIV/AIDS is a global epidemic with the greatest burden in terms of prevalence, morbidity and mortality in sub-Saharan Africa, parts of Asia and, more recently, the Caribbean. Immigrants from these regions of birth now make up a significant proportion of people living with HIV in many high-income countries, including Australia. The higher priority accorded to people from culturally and linguistically diverse (CALD) backgrounds in Australian national and local HIV/AIDS strategies generates a broad question on 'how' to implement HIV prevention interventions with immigrants to address what are often atypical modes of HIV transmission and observed disparities in areas such as later presentation with HIV.

HIV prevention in Australia has included whole-of-population approaches alongside targeted approaches, which address HIV prevention with specific groups – usually those disproportionately affected by HIV/AIDS such as gay men or injecting drug users. Targeted health promotion interventions for immigrants have also formed part of the HIV response in Australia. Immigrants in Australia may have acquired HIV prior to their first arrival in Australia, on subsequent travel abroad, or within Australia. A key gap in our evidence base in Australia includes what we can learn from interventions implemented in other high-income countries to guide new, or strengthen existing, approaches to culturally appropriate primary and secondary HIV prevention with immigrants locally.

Typically it is taken as a given that prevention interventions will be more effective if they are culturally appropriate to the population they serve, and a range of strategies and activities are used to achieve this. However, there is rarely an examination of what mechanisms – the 'change elements' or program theories of the intervention – contribute to culturally appropriate interventions. This research, in the form of a realist review of evidence, sought to 'unpack' the mechanisms for achieving cultural appropriateness in HIV prevention interventions with immigrants that have been implemented in contexts similar to Australia. Thus the broad question the research sought to answer was 'How and why do interventions work (or not), for which groups of immigrants, and in what contexts?' The review of evidence in HIV prevention included a span of interventions from community-level approaches using mass media through to interventions delivered at a group level to immigrants.

Systematic searches were carried out on major public health databases (PubMed, CINAHL, Sociological Abstracts, PsychInfo) and Google Scholar to find peer-reviewed and grey literature relevant to HIV prevention among immigrants. Two types of studies contributed to the review of evidence – studies of interventions and qualitative studies of immigrants' views on HIV/AIDS prevention – in order to bring together 'expert' and 'lay' understandings of HIV prevention among immigrants. Simultaneously, a scan of the literature mapped preliminary mechanisms contributing to cultural appropriateness in HIV prevention interventions with immigrants. This preliminary set of seven mechanisms – *'authenticity'*, *'understanding'*, *'consonance'*, *'specificity'*, *'embeddedness'*, *'endorsement'* and *'framing'* – were theorised as the key, rather than the only, interrelated mechanisms contributing to cultural appropriateness in interventions with immigrants. These preliminary mechanisms were then tested, revised and refined against evidence – 74 'grey' and peer-reviewed studies and reports relevant to HIV prevention with immigrants – found in systematic searches.

The evidence indicates that the pivotal mechanisms contributing to cultural appropriateness in HIV prevention interventions with immigrants are *'understanding'* and *'consonance'* – ensuring that language (usually the 'mother tongue') and cultural values are included as key elements in the development and implementation of the intervention. *'Authenticity'*, *'specificity'* and *'embeddedness'*were moderately important in contributing to cultural appropriateness – mechanisms that dealt with staffing, targeting through ethnicity and using settings for interventions – from the evidence included in the review. Finally, there was mixed evidence for the roles of *'endorsement'* and *'framing'*, which suggests that gaining community endorsement or partnering initiatives with immigrants or immigrant community institutions were the least critical mechanisms in contributing to cultural appropriateness in terms of HIV prevention interventions. Further research is needed to examine the relationships between these seven mechanisms and any impacts they contribute to the effectiveness of interventions and HIV-related health outcomes among immigrants.

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.;

Signed: Date:

Section One BACKGROUND

Chapter 1 Introduction

The HIV/AIDS epidemic is one of the major public health challenges to emerge over the past 25 years with the burden of morbidity and mortality concentrated in developing and middle-income countries around the world. In many developing and middle-income countries, especially in sub-Saharan Africa, parts of Asia and, more recently, the Caribbean, there is a generalised HIV/AIDS epidemic attributed predominantly to heterosexual transmission with far-reaching consequences for the populations and economies of these countries. [1] In contrast, in many high-income countries in Europe, North America and Oceania, HIV generally emerged in sub-populations of gay men, injecting drug users and sex workers. [2] Advances in treatment over the past decade have seen a shift from HIV being regarded as a life-threatening disease to being seen by many as a chronic manageable infection in these high-income countries and, by reducing viral load, treatment has contributed to prevention goals. [1] Despite these advances in treatment, targeted primary and secondary HIV prevention has remained central to public health efforts. There have been some notable successes in changing sexual and drug using behaviours in many high-income countries to minimise HIV transmission especially among gay men, injecting drug users and sex workers, resulting in a continuing low prevalence of HIV in the 'general' population in many of these countries. [2]

More recently, in parts of Europe, North America and Oceania (including Australia), immigrants from developing and middle-income countries have emerged as significant populations in newly diagnosed HIV infections (e.g., see del Amo and her colleagues [3] for an overview of the situation in the European Union) in what can be viewed as a diversification of the HIV epidemic. This may be associated with accelerating international migration and population mobility which has seen many high-income countries become multi-ethnic societies over the past few decades. [4] The vulnerabilities of immigrants living in high-income countries to the negative impacts of HIV/AIDS include social exclusion along with socioeconomic, cultural and language barriers to HIV prevention. [3 5] The dominant modes of HIV transmission among these immigrant populations tend to mirror HIV epidemics in their countries of birth [3 5-7] and thus are often atypical to the predominant modes of transmission among people born in high-income countries.

In Australia, immigrants from developing and middle-income countries have accounted for more than 20% of annual HIV notifications from 2003 to 2007. [8] This has prompted a shift in policy at national and local levels in Australia which has raised the priority accorded to immigrants from developing and middle-income countries in national and local HIV/AIDS strategic frameworks over the past five years. [9] [10]

HIV prevention in high-income countries has included whole-of-population approaches alongside targeted approaches which address HIV prevention with specific groups – usually those disproportionately affected by HIV/AIDS such as gay men or injecting drug users. [11] Immigrants comprise a heterogeneous aggregation of diverse sub-populations in terms of countries of origin, ethnicities, languages spoken, experiences of migration and dominant modes of HIV transmission. [5] This diversity presents a set of challenges and opportunities for targeted, appropriate and effective HIV/AIDS health promotion for immigrants in high-income countries. It is generally accepted that health promotion interventions will be more effective if they are culturally appropriate to the population they serve, even if the strategies used to achieve this appropriateness vary widely. [12] In international HIV/AIDS policy documents [13] culturally appropriate programs are recommended for HIV/AIDS prevention with immigrants with little guidance as to how to achieve this in policy and practice. In Australia, the increased priority accorded to HIV prevention among immigrants in HIV/AIDS strategic plans in recent years generates a new set of policy and practice questions including 'How and why?' HIV/AIDS prevention among immigrants work. As there is minimal Australian-based evidence to answer these questions, we need to unearth what can be learned from interventions in other high-income countries that may have a longer history of targeted HIV prevention programs with immigrants. A key gap in our evidence base in Australia includes what we can learn from interventions implemented in other high-income countries to guide new, or strengthen existing, approaches to culturally appropriate HIV prevention with immigrants in Australia.

Thus this research seeks to gain insights into the emerging area of HIV prevention with immigrants with the overall aim being to inform policy and practice in Australia at this time. The focus of the research is on group- and community-level interventions, [14] as distinct from interventions which target individuals, and is consistent with retaining the focus of this research in the field of public health. The research, a review and synthesis of evidence, draws on evidence from HIV prevention interventions at group- and community levels with immigrants in high-

income countries and studies of the views of immigrants themselves on HIV prevention. The research is primarily guided by the methodology of a realist review of evidence [15] that seeks to answer a research question around 'How and why do HIV/AIDS prevention interventions with immigrants in high-income countries work?' Consistent with a realist review approach, a key goal is to uncover underlying theories operating in primary and secondary HIV/AIDS prevention interventions with immigrants in high-income countries, to uncover explanations as how and why they work (or not) for particular groups in particular contexts and thus refine the theories underlying these interventions. [16] As with many other areas of public health, reviews of evidence in HIV/AIDS tend to be dominated by systematic reviews that are often defined around outcome measures and study design criteria and some systematic reviews of HIV/AIDS interventions with immigrants in high-income countries have been carried out (for example, the work of Darbes et al [17] and Herbst et al [6] in the USA). In contrast, this realist review of evidence seeks to add new knowledge to the emerging area of HIV prevention among immigrants by drawing on a wider range of evidence to answer questions that go beyond 'What works?' to answer 'How and why interventions work (or not), for whom, and in what contexts?' The primary audience for this research is Australian HIV/AIDS policy makers, practitioners and researchers though the findings of this review may be of relevance to a wider audience, especially in other high-income countries.

This research dissertation is structured into four sections: Background, Approach, Findings and Discussion. The Background section is set out in three chapters: Introduction, Background to the Research Question, and Research Aims and the Research Question. The Approach section is set out in three chapters: Methodology, Methods and Analysis Methods. The sequence of steps generally taken in systematic reviews differ from those in realist reviews of evidence where analysis and synthesis tend to occur alongside each other. [15] Nonetheless for clarity I have retained a structure in this dissertation where the analysis chapter precedes the research findings. The third section is the Findings section which is set out in two chapters: Prevailing Program Theories Underlying HIV/AIDS Prevention Interventions with Immigrants and Synthesising the Evidence from Intervention and Views Studies. The fourth and final section is the Discussion section which has two chapters; Implications of this Review of Evidence for Policy and Practice and Conclusion.

Chapter 2 Background to the research question

This chapter begins by providing an overview of HIV/AIDS among immigrants which includes an examination of the epidemiology, including the disparities and differences in HIV-related health experienced by immigrants, and the role of population migration and mobility in the dynamics of HIV/AIDS among immigrants in Australia and other high-income countries. I then turn to explore the relationships between migration and ethnicity and the impact they have on the health of immigrants in order to provide a better understanding of the context in which HIV/AIDS prevention interventions with immigrants occur. I examine the policy context of migration and ethnicity before discussing public policy towards the health of immigrants in high-income countries and presenting a brief summary of public policy towards the health of immigrants in Australia. Finally I examine targeted HIV/AIDS health promotion at group and community levels in high-income countries to complete the backdrop to the research question.

2.1 Overview of HIV/AIDS among immigrants in high-income countries: a global and local problem

HIV/AIDS is one of the major epidemics that has confronted public health globally in the past 25 years and is one of six infectious diseases which the World Health Organisation estimates accounts for over 90% of deaths worldwide from infectious diseases. [18(p.6)] HIV/AIDS has spread to all countries, albeit to varying degrees, with the most common routes of transmission being unprotected sex between men and women and men and men. The expansion of the epidemic has not affected the world's populations equally with HIV contributing to far greater morbidity and mortality in many developing and middle-income countries when compared to high-income countries. Within high-income countries too the impact on populations has tended towards those often regarded as being on the margins of society. Gay and homosexually active men, injecting drug users and sex workers were often the populations where HIV/AIDS emerged in high-income countries and, in many instances, it was the early and effective mobilisation of these populations around which the public health responses and structures were subsequently built and eventually funded. [2] In Australia, the mobilisation of voluntary organisations of gay men, injecting drug users and sex workers in the early stages of the HIV/AIDS epidemic was an integral part of the public health response and eventually spawned the funding of non-government HIV agencies which harnessed this mobilisation and advocated for the rights and interests of these populations.

[2] The early response to HIV/AIDS in Australia occurred in a context of substantial impediments including widespread fear and prejudice which was reflected in media reporting, [19 20] legislative impediments including the criminal status of male homosexual sex, [21] the illegality of possessing – let alone distributing – clean injecting equipment, [22] and the illegality of most forms of sex work. [23] The public health response in many high-income countries in this early pre-1996 phase, what Kippax and Race [2] characterise as the "prevention only" (p. 2) phase before the advent of effective HIV treatments, resulted in a remarkable modification of sexual and drug using behaviours in many high-income countries in Europe, North America and Oceania. Indeed Australia is one of the high-income countries which is widely regarded as having successfully contained HIV/AIDS especially among gay men, injecting drug users and sex workers. In more recent years this early and sustained success in Australia has been tempered by trends of increasing HIV incidence, particularly among gay men, [8] and this has contributed to what some have observed as the (re)emergence of media reporting of 'a crisis' in HIV/AIDS. [24]

The story of the global HIV/AIDS epidemic over the past 25 years is not just one of expansion and containment but also one of diversification especially in the last decade or so. In developing and middle-income countries where HIV/AIDS was often characterised as an issue primarily affecting heterosexual men and their sexual partners – women and female sex workers – analyses of HIV incidence show changes in the patterns of new infections over time. Recent analyses of HIV incidence in countries such as Uganda, Thailand and Kenya indicate that men who have sex with men and injecting drug users – populations that often received little attention in HIV prevention programs in these countries in the past – are now significant sub-populations at risk of HIV. [1] For example, in Thailand where the early, and largely successful, efforts to contain HIV focused on condom use among heterosexual men and sex workers there are signs of an emerging epidemic among gay men and injecting drug users. [1 25] In high-income countries the diversification of populations affected by HIV/AIDS has generally followed a different path and, while far from universal, there is an emerging trend of immigrants making up a greater proportion of people newly diagnosed with HIV [5] in parts of the European Union, [3 26 27] other European countries, [7] the USA, [6 28-31] Canada, [32] and Israel. [33] These immigrants are generally from countries in sub-Saharan Africa, Asia and the Caribbean where HIV is more prevalent and the dominant mode of heterosexual transmission of HIV in these developing and middle-income countries is often mirrored in the immigrant communities in high-income countries. [7 26 30 32] In Australia the pattern of HIV/AIDS among immigrants is broadly in line with trends observed in

other high-income countries. Here immigrants accounted for 22% of HIV notifications in the period 2003–2007. [8] People born in two regions, Asia and sub-Saharan Africa made up 15% of all notifications, and the highest age-standardised incidence rate for HIV in Australia is among people born in sub-Saharan Africa. [8] The diversification of HIV/AIDS in some high-income countries has also impacted on immigrant gay and homosexually active men, with large epidemiological studies [34] in the UK finding that "Black and Minority Ethnic" (p. 345) men (which would probably include significant numbers of immigrants) had higher rates of diagnosed and undiagnosed HIV infection compared to British-born gay men and smaller surveys in the USA indicating higher rates of diagnosed HIV infection among young Latino gay men. [35] In Australia, it is difficult to assess the proportion of heterosexual or homosexual incidence of HIV among immigrants as there is no published analysis of national HIV notifications in Australia by transmission category and country of birth. However, unpublished HIV surveillance data in NSW from 2000–2007 indicates that homosexual transmission accounts for almost half of HIV notifications among immigrants from developing and middle-income countries in NSW. [36]

Changes in HIV/AIDS notifications among immigrants have often not been consistently monitored in national HIV/AIDS surveillance systems in high-income countries either because no relevant indicator is collected or because a range of different variables are used in routine HIV notifications to public health agencies. [3 8 30 32] The reasons for this are complex and relate in part to differing notions of race, ethnicity and nationality which are bound up in historical contexts which I will explore in detail in the next section (2.2). In spite of these differing notions useful indicators in the public health field include country of birth, language, religion [37] and year of arrival. Of these, even relatively unproblematic variables, such as birthplace, have only recently been collected in HIV/AIDS surveillance in many high-income countries. For example, del Amo and her colleagues [3] found that country of birth was only collected in 11 of 17 Western European countries and only first published in 2003. Similarly in Australia, where immigration has had a central role in shaping the population, the national HIV/AIDS surveillance system only began to collect and report on birthplace in 2002. [8] Consequently, it is conceivable that the increases in HIV that have been observed in many high-income countries may be related, in part, to the enhanced surveillance measures that were implemented to monitor HIV among immigrants. In Australia this appears to be unlikely as two indicators, country of birth and language spoken at home, which have been collected in New South Wales, the most populous local jurisdiction, since the mid-1990s have shown no major trends upwards in unpublished analyses. [36] Somewhat

paradoxically, surveillance systems in high-income countries that have been slow to collect relatively simple, and potentially reliable data, among immigrants diagnosed with HIV (such as country of birth and year of arrival) appear to more readily embrace notions of 'imported infection'. In the European Union many states publish estimates of HIV infections 'probably acquired abroad' [26] though the reliability of this data is questionable as it is generally only collected for heterosexually acquired cases of HIV. No estimates are published for HIV infections 'probably acquired abroad' among cases of HIV acquired by either gay men or injecting drug users. This is in part due to the categories of HIV risk adopted by many high-income countries which are derived from the Centers for Disease Control and Prevention in the USA where one of the risks of heterosexual transmission is the country of birth of the case or the country of birth of their sexual partner. [2] Thus in Australia, a gay man from Thailand could acquire HIV overseas and be reported as a gay male HIV notification, while a heterosexual Thai man who has acquired HIV overseas will have his own, and the country of birth of his sexual partner, reported in routine HIV surveillance. [8] In an attempt to address these anomalies, Australian public health authorities have recently agreed to changes to national HIV surveillance and from 2008 all new cases of HIV have collected data on the likely country of acquisition of HIV irrespective of country of birth or exposure category. [36]

Alongside questions on the importance of monitoring of HIV/AIDS among immigrants in high-income countries there has been a growing body of evidence in the literature of the disparities and differences being experienced by immigrants in high-income countries around HIV/AIDS. As with other strands in this story of immigrants and HIV/AIDS this evidence generally emerged from the mid-1990s onwards. In the early 1990s some researchers tentatively asserted that immigrants were more likely to be vulnerable to HIV/AIDS, [38] perhaps based on the wide knowledge that immigrants in previous decades had been shown to be more vulnerable to other infectious diseases such as tuberculosis (TB). These early sentiments were followed by studies and analyses of surveillance data which often, though far from universally, documented a pattern of disparities between immigrants and local host populations. Some epidemiological studies found different prevalence rates between immigrants and host populations in the opportunistic infections that accompanied HIV disease – with, for example, lower rates of some HIV-related pneumonia and higher rates of TB observed among HIV-positive immigrants in the UK [39] and in Australia. [40] Other epidemiological studies documented disparities between immigrants from some regions of the world and locally-born populations in terms of later presentation with HIV

both before and after the advent of effective HIV treatments in the mid-1990s. [3] Early presentation with HIV has significant potential benefits in terms of reducing morbidity and mortality and also has significant potential benefits in terms of primary and secondary prevention. [39] Epidemiological studies in Europe have reported later presentation among African and Caribbean immigrants, [3 41 42] and in the USA later presentation has been reported among Latinos, [6 31] and Asian and Pacific Islanders. [43] Later presentation with HIV has also been reported in Australia among immigrants with the highest rates of late presentation associated with immigrants from Asia and more recently sub-Saharan Africa. [8 44 45] These reports and epidemiological analyses in Australia have generally found the lowest rates of late presentation among immigrants from other high-income countries in North America, the UK/Ireland and other parts of Oceania (made up mostly of people born in New Zealand). [8 44 45] The greatest variation in HIV/AIDS-related outcomes among immigrants living in high-income countries are between immigrants from high-income countries and immigrants from developing and middle-income countries. Health outcomes for immigrants from other high-income countries appear to closely match outcomes for the Australian-born population.

Another key theme of the disparities observed in the HIV/AIDS literature between immigrants and host populations has been in the area of HIV testing. Here the evidence of disparities between HIV testing rates of immigrants and host populations tends to be derived mainly from analyses of ethnicity (variously defined depending on the study) within larger samples of gay men in high-income countries. A survey of over 13,000 gay men in the UK found varied results in terms of ethnic groups in HIV testing with Asian gay men least likely to have ever tested for HIV and least likely, having been tested, to be HIV positive. [46] Smaller surveys of gay men in the USA have found that Latino gay men were the least likely to have ever tested for HIV [47] when compared to other gay men. In contrast a recent analysis of secondary data noted increased HIV testing among Asian and Pacific Islander gay men in San Francisco in the period 1995–2005 and, in those who tested, significantly lower rates of HIV compared to 'white' gay men. [48] A difficulty in the interpretation and use of these studies in this discussion is that they did not clearly distinguish between immigrant and locally-born ethnic minority gay men which is a recurring issue in studies exploring immigrants and HIV. In Australia two dedicated surveys of Asian gay men in Sydney, where virtually all the participants were immigrants, have found very low rates of prior testing for HIV while the prevalence of HIV was much lower than in comparable samples of the Australian-born gay men [49 50] which is similar to the findings of surveys among immigrant

gay men in the UK. [46] Research documenting HIV testing rates among heterosexual immigrants in high-income countries are rare. This perhaps can be explained by the relatively recent upswing in HIV diagnoses among immigrants in high-income countries which has brought heterosexual transmission to the fore among these sub-populations. A survey among African and Caribbean immigrants in the Netherlands found higher HIV testing rates among women than men, which is thought to be primarily due to the impact of routine (or 'opt-out') testing offered to all women in antenatal care in the Netherlands. [51] There are no published studies that give an insight into HIV testing rates among heterosexual immigrants in Australia though some studies are being finalised at the time of writing.

Social research which might give an understanding of the cultural norms that may impact on HIV risk behaviours among immigrant communities is generally lacking. An exception is the body of research carried out in the USA with Hispanic populations, [6] the majority of whom are immigrants from Central and Latin America, and parts of the Caribbean. While there is considerable diversity in terms of ethnicity and countries of origin for Hispanic immigrants in the USA there are thought to be many shared cultural beliefs [6] including *machismo*, *simpatia*, *familismo* and *respeto*, each of which it is theorised differ from the cultural beliefs of mainstream Americans in areas of male and female gender roles, interpersonal relationships, and the place of family. [6] These cultural beliefs are theorised to impact – positively and negatively – on key HIV-related behaviours such as condom use, the sharing of drug injecting equipment, and the discussion and negotiation of sexual issues in relationships. [6] Among Hispanic gay and homosexually active men these same cultural norms have been theorised as potentially contributing to greater sexual risk taking and drug use and may lead to a reluctance to be open about their sexuality and adopt a bisexual identity [6 35 52] which can leave these men without the potential supports of either their ethnic community or the gay community. [35]

In Australia there have been few studies which attempt to uncover the cultural beliefs of immigrants in relation to HIV risk behaviours or which chart the HIV risk behaviours of immigrants. One study in Melbourne of Salvadorian and Chilean immigrant women found that cultural beliefs such as *machismo* are central to gender roles in these two Spanish-speaking background communities with these cultural beliefs seen as being under threat in the new society. [53] These threats gave rise to conflicted feelings for the women in the study on whether to embrace the changes the threats seem to promise or to resist the threats in order to be seen to preserve

ethnic and cultural identity. [53] This sense of having more than one identity – what Mao et al [54] call "dealing with the divide" (p. 419) – from which social and cultural norms are derived has also been explored in a qualitative study of Asian gay men in Sydney. The study found that aspects of a gay identity and an Asian identity were seen as being conflicted for the participants with much of the tension around the notion of collectivism, which participants strongly valued as a part of their Asian cultures, and individualism which was perceived to be strongly valued in Australian gay sub-cultures. [54] Relatively few studies have charted the HIV risk behaviours of immigrants in Australia with the exception of a survey carried out with Vietnamese men in Sydney [55] as part of a larger landmark survey of the sexual behaviours of Australians and two studies [49 50] of Asian gay men in Sydney. These three studies pointed to different HIV risk behaviour patterns among immigrants when compared to their Australian-born counterparts. [49 50 55]

A final strand in the story of immigrants and HIV/AIDS in high-income countries can be loosely woven around the links between the national and global HIV/AIDS situation through the dynamics of migration and population mobility in an era of globalisation. Population mobility and migration is unprecedented today in volume, speed and reach. [56] It has been estimated that in 2005, international migrants accounted for almost 10% of the population in high-income countries, up from 5% 20 years earlier. [57] I will turn to the issues that drive migration and population mobility in more detail in the next section (2.2) but here I want to briefly explore migration and population mobility in the context of infectious diseases. Population mobility and migration has long been implicated in the history of infectious diseases like TB and hepatitis B with much higher rates observed among immigrants [58-60] and more recently in the spread of highly communicable diseases such as SARS. [18] Population mobility and migration has also been observed as a driver of HIV transmission within countries among highly mobile people such as truckers [13] and appears to have assisted the global spread of HIV from the early 1980s onwards in bringing populations with different background prevalence rates of HIV into closer proximity with each other. [18 60] Thus population mobility and migration "has become the bridge between epidemiologically disparate and socially and spatially isolated regions and people" [18(p.4)] in the area of infectious diseases. This encapsulates a key public health challenge for high-income countries which are witnessing expanding and, sometimes, rapid immigration to and from their nation-state concurrent with an expanding global HIV epidemic with the potential for increased HIV transmission within and between immigrant and host populations at a time when the power

and role of the nation-state is arguably contracting. [4] The complexities and interactions between the national and global dimensions of public health are not solely confined to infectious diseases but are part of a wider consciousness of the challenges of promoting health in an era of globalisation. [60] [61]

HIV transmission is known to be affected by a number of factors including the average probability of transmission, the number of exposures, viral load, co-infection with other sexually transmissible infections and the prevalence of HIV within a given population. [62] Clearly, HIV risk behaviours in a country where there is a high prevalence of HIV can pose a greater risk for HIV transmission. In Australia, discussion about immigration and HIV is often framed in terms of the 'threat' posed by immigrants to the locally-born population in 'importing' HIV from their countries of origin. [63] This is despite the fact that since the mid-1980s all applicants for permanent migration to Australia undergo HIV testing as part of the health requirements. [64] Currently, it is not possible to determine with any precision how many cases of HIV in Australia are likely to have been acquired overseas – by either immigrants or by people born in Australia – as a field which could provide this data has only recently been added to routine HIV surveillance systems. [36] Immigrants resident in Australia may have acquired HIV prior to their first arrival in Australia, or on subsequent travel abroad or within Australia. Thus HIV prevention strategies should not focus exclusively on the HIV risks associated with travel [63] to the detriment of other potential drivers of HIV transmission. Instead primary and secondary HIV prevention efforts should aim to address a wider array of factors that may contribute to HIV transmission among immigrants.

2.2 Migration, ethnicity and health

Migration can refer to the movement within and across borders, whereas immigration generally refers only to temporary or permanent migration across national borders. [65] It has been estimated that at the end of 2005 between 185–192 million people, or 2.9% of the global population, were living either permanently or temporarily outside their countries of birth. [66] Many people move legally, and some unlawfully, in search of opportunities. Others are effectively forced to move for humanitarian reasons or are trafficked across borders. At the end of 2004 there were estimated to be more than 19 million people – refugees, asylum seekers and internally displaced persons – of concern to the United Nations High Commission for Refugees. [67] Accelerating mass movements

of people globally are the environment in which many high-income countries including Australia need to construct HIV/AIDS prevention policies and programs in a globalised world.

The term immigrant is a broad term that can refer to anyone who has migrated temporarily or permanently, for voluntary or involuntary reasons, to another country and thus can include migrant workers, 'undocumented' workers, refugees and asylum seekers, and international students. [68] Immigrants who move temporarily to a destination country may eventually seek to settle permanently, an immigrant who migrated on a student or worker visa may gain permanent residency on humanitarian grounds, and immigrants who settle permanently may migrate temporarily or permanently elsewhere. Consequently, HIV/AIDS prevention interventions with immigrants can involve populations which are transient, or permanently settled, or both in high-income countries. Consequently a precise definition of an immigrant can shift depending on whether one is using an administrative or legal framework (e.g., the visa class currently held by the immigrant) or if one is using a social science framework. A social sciences framework is more pertinent to this discussion given the growing acceptance that health is created or retarded in wider social contexts. [69] In the social sciences immigration has been conceptualised by Parkes (1971) as a major psychosocial transition, [70] a life-changing event and process that affects many domains of an individual's world leading to stressful challenges and the need for restructuring and adapting to new expectations. The degrees to which this transition impacts on the health and well-being of immigrants may be shaped by micro and macro factors at each stage of the migration process, such as social conditions that were in play pre-migration, the stressors or otherwise of migration itself, and the social, cultural, legislative and administrative conditions on arrival in the destination country. [68] People who migrate are typically vulnerable to begin with and move, or are forced to move, to seek better or safer opportunities of survival. [71] At any stage of the migration process their human rights may be fundamentally threatened or violated. [72] For example, the descendants of immigrants may remain non-citizens even if they are born in that destination country, [4] as was the case in Germany for millions of 'guest workers' who had access to many of the social benefits of citizens but no access to political rights such as voting after decades of living in the country. [73] This can have profound impacts on the ability of immigrants living in these contexts to effectively mobilise and advocate for HIV/AIDS prevention for their communities. Similarly, at a more bureaucratic level, it is not uncommon in high-income countries for access to essential publicly-funded health services to be allowed or disallowed by administrative fiat to certain categories of immigrants (including children) who are legally

resident in the destination country – as if access to essential health care services were a discretionary item in the lives of human beings. [67 68 72] For example, in Australia access to publicly-subsidised HIV treatments is restricted to permanent residents [64] and the annual cost of unsubsidised HIV medications is likely to be a significant impediment to the health of HIV-positive immigrants who may be legally (but temporarily) resident yet are ineligible for these treatments.

An understanding of the drivers of international migration and population mobility is important in considering the impacts and interactions between immigration and the social and economic determinants of health. There is no single coherent theory of the drivers of international migration and Massey et al [74] suggest that what is needed is to incorporate a consideration of a variety of paradigms and levels. From economics, micro theories emphasise decision making by immigrants to maximise human capital or decision making by larger units of related people, typically families, for a collective benefit; while some macro theories accentuate the wage differentials between countries as drivers of immigration. [4 74] Essentially these share a sense of rational choice which is only partially useful in explaining the drivers of migration. [4] Other theories underscore the systems created by the structure of post-industrial market economies and the organisation of the global market which have created and perpetuated flows of labour in one direction and goods and capital in the opposite direction. [74] These systems theories also emphasise that the drivers of migration flows are stronger between countries previously linked through colonisation, political patronage, trade, language or cultural ties. [4 74] This is evident in Australia where to this day people from the UK still constitute the largest single country of birth in Australia's immigration intake each year. [75] Migration between countries is also thought to be perpetuated by the networks and institutions created by immigrant communities in destination countries such that each wave of migration influences subsequent migration flows. [74] International migration is intimately linked to globalisation and one aspect of migration flows is the migration flow to 'world cities' where there is a strong demand for highly-skilled and low-skilled industrial and service workers. [4(p.77)] The increases and changing patterns of outward migration can alter the nation-states immigrants have left by creating a 'brain drain' of skilled workers. For example, Loue and Galea [68] point to the shortage of nurses in the Philippines due to the migration of nursing graduates, a little discussed impact of immigration on developing economies, which is perhaps mitigated by the remittances sent 'home' by these immigrants. [4] Accelerating international migration and population mobility has radically diversified and altered

the populations of destination countries with most Western countries in the past 50 years becoming multi-ethnic societies. [4 74 76]

Immigration to Australia, in essence a nation-state created in part through colonial settlement, has mirrored global trends in immigration with a highly regulated immigration system starting with the immigration of convicts and settlers. [77] Like many countries, Australia has tended to use and regulate immigration for economic and strategic reasons. Tied to this was an implicit and explicit goal that was encapsulated in the White Australia Policy to keep Australia white and British. [4(p.9)] Immigration rapidly expanded after World War II with the resettlement of the refugees mainly from Eastern Europe (who were thought to be more assimilable). [77 78] Successive waves of immigration were broadly from Southern Europe in the 1950s and 1960s, Asian and Latin American countries in the 1970s and 1980s, and from the 1990s onwards from the Middle East, [78] the Balkans and Africa. [79] Australia is one of 16 countries internationally that permanently resettles refugees under its Humanitarian Program immigration policy [67 79] and over 500,000 refugees have settled in Australia in the past 50 years. [80] Australia resettles about 11,000 refugees in the Humanitarian Program each year with the majority of these arriving after being processed offshore. [75 81] The Humanitarian Program intake is small when compared to the family and skilled migration programs which now account for more than 150,000 permanent settlers each year. [75] Thus immigrants to Australia are highly heterogeneous in terms of their experiences of immigration, their ethnicity, gender, age, class, socioeconomic status and their year of arrival. [79] Somewhat paradoxically the goal to keep Australia white and British has resulted many decades later in one of the most ethnically diverse societies in the world. As one of many multi-ethnic societies in the world today this begs the question – 'What is ethnicity?' – to which I will now turn.

Ethnicity as a term only became widely used in the 1970s and shares much ground with terms such as race and nation to describe 'people of the same stock'. [76] Race is now generally seen as a biological term [82] though the currency of the term varies depending on the context, so events and actions described as racial conflict in the USA are likely to be called ethnic conflict in the former Yugoslavia.[76] This context also impacts in the area of public health so that in the USA what might be called racial disparities in health are more likely to be described as ethnic disparities in Europe or Australia. Guibernau and Rex [82] cite Max Weber (1922) who was one of the first theorists to attempt to conceptualise ethnic groups around their "subjective belief in … [a]

common descent because of similarities in physical type or of customs or of both, or because of memories of colonisation or migration" (p. 2). Today ethnicity is seen as being about 'descent and culture' with ethnic groups thought of as 'descent and culture communities'. [76] Fenton [76] adopts the position that ethnicity is neither socially constructed nor 'real', neither is it imaginary nor does it 'govern' people, and the expression of ethnicity is highly dependent on the social context. He argues that there cannot be a theory of ethnicity per se but rather that ethnicity is "something of great interest to be observed and situated theoretically within a sociology of modernity". [76(p.3)] Ethnic groups are defined in a social context [82] derived from "the ethnicity claimed by the people themselves and that attributed to them by others" [82(p.3)] which highlights the subjective and situational dimensions of ethnicity where some cultural features are used by people themselves and others, while other cultural features are discarded. [76] Here we can see ethnicity as conditional and situational as distinct from primordial which is the focus of considerable debate in the literature on ethnicity. [76 82 83] While over time ethnicity may become optional for some immigrants, like middle-class Australians of Irish descent, Waters (1990) argues that ethnicity is far less optional for more recently arrived migrants who are ethnically dissimilar from the mainstream culture. [76(p.112)] The critical issue according to Barth (1969) in defining the ethnic group becomes the 'maintenance of the boundary' between one group and another. [76(p.108)] Eriksen (1993) offers a useful framework to categorise five types of modern ethnicity: urban minorities made up of immigrant workers and traders; ethno-national groups who have or lay claim to a territory (e.g. Québecois within Canada); ethnic groups in plural societies (e.g., Vietnamese in Australia); indigenous minorities (e.g., Maori in New Zealand); and what he calls post-slavery minorities – descendants of people enslaved often in the New World (of which African-Americans are the classic example). [84(p.32)] Using Eriksen's categories, the two that are of most relevance to this research question from an Australian perspective are immigrant workers and traders and ethnic groups in plural societies. The general conclusion drawn by Fenton [76(p.181)] which is of critical importance to this review of evidence of HIV/AIDS prevention is that while ethnicity can be a source of motivation it rarely is, nor does it usually constitute the principal framework of social organisation, nor is it the fundamental principle of action. Thus while ethnicity may be important as a conditional and situational context of HIV/AIDS prevention among immigrants we should also guard against overstating its importance.

Ethnicity and immigration are related in complex ways to the nation-state and this in turn influences debates which are often framed around nationalism and racism. The concept of the

nation-state often implies a close link between ethnicity and political identity [4] and, as I have outlined earlier, ethnic group affiliation can be either claimed or attributed to people in these contexts. [76] Even though immigrants are generally not concerned with statehood in their land of settlement [82] nonetheless there are significant tensions in modern plural societies. [85] Modern plural societies are in essence often striving for a "society which is unitary in the public domain but which encourages diversity in what is thought of as private or communal matters". [85(p.208)] A nation-state that was adopting a more assimilationist approach would seek to also enforce some 'unifying' practice in private or communal matters. [85] Societies which use varying levels of what Castles [4] calls "differential exclusion" (p. 135) – often where immigrants are denied access to entitlements and rights – represent the third broad approach by nation-states to respond to ethnicity and immigration. In reality nation-states may use aspects of all three approaches but the tensions in plural societies (like Australia) turn to a large degree on perceptions of public intrusion into private domains. For example, there can be considerable tensions in areas that are seen to communicate values and skills [85] including education, especially the teaching and rights to use 'mother tongue' community languages, the teaching of religion, and arguably in a value-laden area of public health such as HIV/AIDS. These tensions primarily impact on the immigrant ethnic minority populations as for the ethnic majority community the public and private domains are largely congruent with their expectations and values. [85] For ethnic majority populations racism and nationalism can find a fertile ground in the decline in industrial societies which is often associated with downward social mobility leading to a scapegoating of immigrants for this failure. [86] Immigrants and certain ethnic groups can be seen to be benefiting too much from the welfare systems of the state. [86] These forces can give rise to nationalism and a form of racism which sees immigrants and ethnic minorities as threats to the 'culture' of the society. [86] It is for this reason that Wieviorka [86] characterises modern racism, which classically was about the inferiority of others, as now more likely to be marshalled around notions of others as fundamentally 'different' and a 'threat' to the modern nation-state. These racist overtones can also permeate the framing of HIV/AIDS prevention among immigrants with an emphasis on the 'threat' that immigrants potentially pose rather than on their vulnerabilities to HIV/AIDS. [13] Some have suggested that the 'threat' of immigrants has also been part of the framing of HIV/AIDS prevention among immigrants in Australia. [63]

Australia has followed its own peculiar course with ethnicity, articulated in the administrative term 'people from non-English speaking backgrounds (NESB)' being embraced in the early

1970s in the Galbally Report in 1978 – a report credited with cementing a progression to multiculturalism [87] as the primary model for responding to ethnicity from the earlier policies of assimilation. Ethnicity and multiculturalism in Australia are associated with immigrants, primarily those from non-English speaking countries, and ethnicity is resisted by many indigenous Australians who fear being labelled as simply another 'ethnic group' rather than the original inhabitants and custodians of the continent now called Australia. [4(p.147)] As with other plural societies the ethnic majority – in our case white Anglo-Celtic Australians – are generally not seen as possessing ethnicity. In Australia too we have had on-going debates about the threats and benefits of immigration especially in relation to the immigration of 'ethnic groups' in various spheres from the scholarly to the everyday and tabloid. Jupp charts 200 years of the scholarly debates around themes including the optimal population size, economic arguments, and the minimisation of social problems and disparities. The most recent iterations of the everyday debates include the high-profile support garnered by Pauline Hanson's One Nation Party in the late 1990s on the back of policies of anti-Asian immigration. [87] The 'tough' stance followed by the Prime Minister John Howard against asylum seekers in the run-up to the 2001 federal election, [60] along with calls by Howard during 2007 to exclude HIV-positive people from migrating to Australia, [88] and comments by his Immigration Minister, Kevin Andrews, on the supposedly inherent antisocial nature of Sudanese refugees in Australia [89] are examples of a pervasive ambivalence towards immigration in some quarters of Australia at least. Each stream of the immigration program to Australia has its advocates with immigrants themselves favouring family reunion; business groups favouring the skilled stream; and socially-minded agencies the humanitarian stream. [87] Having considered the background and contexts of the relationships between migration and ethnicity in high-income nation-states I will now turn to a brief exploration of the nature of migration and ethnicity in relation to health.

It is somewhat difficult to unravel the connections between migration and health. On the one hand, the social determinants of health for immigrants can be regarded as similar to locally-born populations – a population of well-off, educated, employed, legal immigrants where there is a high level of gender and social equality are likely to fare as well in key population health indicators as their destination country counterparts from similar socioeconomic backgrounds. On the other hand, there are often additional migration-related determinants of health which include the health environment at the place of origin, transit or destination, the reason for migration, the legal status of migrants in the destination country and degree of affinity between immigrants and

the language and culture of the destination country. [66] With more rapid and frequent travel, the multiple health environments that immigrants reside in, and return to, can become more closely linked. Thus "merging health environments reflect the socio-economic and cultural background and disease prevalence of communities of origin, transit, destination and return". [58(p.26)] Some have postulated three levels of causation in the impact of migration on health: the macro social, economic and political forces of post-industrial market economies and the organisation of the global market which, as we have noted earlier, create and perpetuate flows of human labour; the structural laws, policies and regulations governing immigrants that can reinforce or mitigate systems of inequality; and environmental factors of the "conditions of living, working and moving" (p. 78). [90] Others have put forward a typology that emphasises the historical, geographical, socioeconomic, cultural and political dimensions of the migration process on the health of immigrant populations. [68] In the specific context of the impact of migration on HIV-related health, others have proposed the profound disruption in social networks, social support and social capital as key determinants of immigrants' health. [91] The factors that drive human migration including human rights abuses, poverty, social inequalities, political upheaval and conflict situations, also influence population health. However, equally it is conceivable that immigration can be beneficial to the health of an immigrant population such as when people leave a highly unstable social and political context to reside in a safe and welcoming destination country. This beneficial trend has been observed in high-income countries such as Australia and the USA, in evidence of lower rates of mortality and chronic disease among immigrants but this has often been interpreted in part to the fact that healthy members of a community are the ones more likely to migrate and move [60 79 92-94] – what has sometimes been called the 'healthy migrant effect'. Against this observation, as noted earlier, in many countries immigrant communities have higher rates of some communicable diseases like hepatitis B and TB, [58-60] and some categories of immigrants, in particular, refugees and asylum seekers, often have poorer mental health status [60 95] due to the forced and involuntary nature underlying their experience of migration. [71]

The nature of the public policy response to immigrant health is likely to be shaped by the overall frameworks that guide public policy in the nation-state towards immigrant populations. It is reasonable to assume that a nation-state that follows an assimilationist approach to immigration [85] would seek to follow an assimilationist approach in public policy towards the health of immigrant populations. Similarly, nation-states which adopt what Castles [4] calls "differential exclusion" (p. 135) – often where immigrants are denied access to entitlements and rights – are likely to follow

"differential exclusion" with respect to access to health care services. In contrast, modern plural societies that seek to frame public policy around multiculturalism [85] would seek to balance the diversity of health needs and rights of immigrants with health policies that respond to this diversity in a flexible and pragmatic way to reduce inequalities. Immigrant health policy has also been influenced by the now outdated 'point-of-entry' models and programs [96] which firmly invested in medical screening, isolation and quarantine of infectious diseases as the central focus to 'keep out' disease and reduce the perceived drain on the public resources of the destination country. [97] The 'point-of-entry' program was perhaps best encapsulated in Ellis Island at the entrance to New York City where for decades ships unloaded their human cargo for mandatory medical inspections. [97] The mass quarantining of HIV-positive Haitian immigrants in Guantanamo Bay, Cuba in the early 1990s is an indication of the enduring strength of the 'point-of-entry' programs and of the social perception of immigrants as disease threats to the populations of destination countries. [97] More recent debates on immigrant health policy argue for a balance between seeing immigrant populations as a potential threat to the destination country but also as populations who may be more vulnerable to disease with needs for appropriate care and rights to health. [58] Gushulak and MacPherson [96] argue that immigrant health policies, such as the 'point-of-entry' programs, designed in a vastly different historical context are ill-suited to a globalised world of rapid bi-directional population mobility. Instead they argue for immigrant health policy which is guided by an integrated perspective which recognises the dynamics of population mobility, gaps in background prevalence, a recognition of migration as a multi-directional process, the adoption of a population (rather than individual) health approach and the implementation of measured strategies to manage the perceptions of risk so that responses to health threats are based on actual and significant risks to public health, rather than over-reactions to lesser threats. [96]

In Australia, the development of ethnic health services and programs occurred in tandem with the cementing of multiculturalism (and the gradual erosion of assimilationist policies) in the 1980s as the central framework of public health policy in relation to immigration. [78] However, it was still assumed that the 'individual immigrant' rather than the health system was the 'problem' when it came to any observed disparities in health status. [78] Gradually in Australia a policy of 'mainstreaming' ethnic health service delivery evolved which sought to make all publicly-funded programs accountable to deliver services to ethnically diverse populations [78] and ethnic populations became one of four 'equal opportunity' categories monitored by public agencies [87] –

the others being 'Aborigines', 'women' and 'the disabled'. The dual central premise of mainstreaming was the right of equality of access and the responsibility of the health system to respond appropriately. [78] Mainstream services were augmented by funding to specialist ethnic health services such as health care interpreting services and psychological services to respond to people who were survivors of torture and trauma. [78] The adequacy and value of 'the mix' between ethnic health services versus mainstream health services is an on-going debate in Australia, situated in a context of wider ideologies, migration policies and multiculturalism. [78 81] This has contributed to a range of models and programs which seek to improve the health of immigrants, some of which are built around the employment of an ethnically diverse workforce, some of which are delivered by ethnic community organisations, and others which work principally to develop the capacity of mainstream services to respond appropriately to ethnically diverse populations. [78] The 'point-of-entry' model of immigrant health also survives in the health requirements for applicants for permanent residency to Australia which includes an HIV antibody test and screening for prior exposure to TB. [64]

2.3 HIV/AIDS health promotion at group and community levels in high-income countries

Health promotion has been a central movement in public health over the last 20 years. While there are various interpretations of what health promotion is, there is general agreement that enabling individuals and communities to take control of their health is central. [98 99] Coupled with this is an understanding that a range of social, political, economic, cultural, behavioural and biological conditions play a part in determining health. [98] Thus health promotion can include interventions which aim to change individual behaviours, influence social norms, utilise models of communication such as social marketing, build community or organisational capacity, and/or support the development of public policy that enhances rather than weakens health. [99] The span of health promotion interventions can be stratified into: individual-level interventions that primarily aim to influence personal knowledge, attitudes, motivations and skills; group-level interventions that attempt to influence personal skills and information within peer or group norms; community-level interventions that focus more on influencing wider social norms; and sociopolitical-level interventions that aim to support change and remove barriers conducive to health across populations [14 100] and for each of these levels there are a range of theories or models that can guide the design and implementation of interventions. [99]

HIV prevention interventions in high-income countries have utilised all three levels of interventions [101] and drawn on a wide range of health promotion theories and models. [102 103] Some authors [101] have characterised early HIV prevention efforts in high-income countries as being reliant on communication to change individual behaviour. This was followed by a gradual evolution in these countries from individual-level interventions in the first decade of the HIV epidemic towards community-level interventions in the second decade alongside a growing recognition that sociopolitical interventions can enhance and sustain behaviour change – so that the focus is less on communication to 'persuade' people and more on environments that 'enable' people to change. [101(p.247)] Peterson and Carballo-Dieguez refer to Parker's earlier paper (1996) to emphasise that this shift has meant that in aiming to change behaviour, the goal is essentially to change how people conceptualise HIV-related risks and behaviours and that this change will "enable individuals and communities to take decisions and make choices that will in fact effectively reduce the risk of HIV infection". [104 (p. 221)] In an Australian context, it has been argued that from the very beginning of the emergence of HIV/AIDS, community-level and sociopolitical-level interventions were central to the early and effective response to HIV/AIDS. [2 22] Interventions to address HIV/AIDS can be further stratified into primary HIV prevention interventions that aim to prevent the transmission of HIV to uninfected people and secondary HIV prevention interventions that aim to prevent people with HIV from acquiring other sexually transmitted infections and preventing onward transmission of HIV. [14] Interventions which explicitly include HIV-positive people in HIV prevention efforts have gained currency in high-income countries in the era of effective HIV anti-retroviral treatments with the aim being to minimise the likelihood of HIV-positive people being re-infected with other strains of HIV (or other sexually transmissible infections) and to reduce the risk of onward transmission of HIV. [105]

HIV prevention interventions in high-income countries have balanced a need for whole-of-population approaches and targeted approaches which address specific sub-populations that are disproportionately affected by HIV/AIDS. [11 101] In general, most high-income countries have used both approaches with whole-of-population approaches such as mass media campaigns being complemented by targeted approaches most often towards populations such as gay men, injecting drug users, sex workers and HIV-positive people. [101] Targeted approaches have been defined as interventions which take into account the shared characteristics of the members of a sub-population. [12] The pitfalls of targeted approaches is that they rely on assumptions of homogeneity in the sub-population [12] and that they can contribute to marginalisation and discrimination of

these populations. [11] The pendulum of these pitfalls has been observed in the Australian media over the past two decades with notions of risk swinging between 'deviants' (usually gay men and injecting drug users) in the early 1980s to 'everyone' in the notorious Grim Reaper TV campaign in the late 1980s and back to gay men's sexual behaviours being represented as destabilising elements with recent increases in HIV in Victoria and Queensland. [24] Australia is one of a number of countries where rates of HIV have been largely been contained among injecting drug users, sex workers and gay men and where rates of HIV have generally remained stable in these sub-populations over time. [101] The risk-reduction strategies adopted by gay men in Australia have been well documented in social research and have evolved over time to include risk-reduction strategies other than using condoms 'every time'. [2 106] Targeted approaches in Australia, such as those with gay men, have been grounded in community engagement and community mobilisation [101] to ensure that the methods and communication used in HIV prevention is consonant with the behaviours and practices of the gay men themselves, uses language that is readily understood and invokes culturally specific values – all hallmarks of a targeted approach. [11 12] Systematic reviews of evidence have also been carried out to determine the effectiveness of these targeted approaches among gay men in high-income countries to guide future interventions and research – see, for example, the work of Rees et al in the UK. [107]

In summary, the preceding overview highlights immigrants from developing and middle-income countries as important sub-populations for targeted HIV/AIDS prevention interventions in many high-income countries. In Australia, immigrants are now being accorded a higher priority in national HIV/AIDS strategic frameworks. [9] Migration and ethnicity impact on the health of immigrants in ways that are hard to define precisely [5 66] and yet are important contexts in which to situate HIV/AIDS prevention interventions. In Australia, targeted interventions that are culturally appropriate to sub-populations such as gay men have been central to the suite of public health programs to prevent HIV/AIDS [2 101] and there are reviews of evidence from other high-income countries to guide appropriate interventions and research. [107] The recent higher priority accorded to immigrants in HIV strategic frameworks in Australia generates a new set of policy and practice questions around how to 'do' targeted and culturally appropriate HIV/AIDS prevention with immigrants. As there is minimal Australian-based evidence of interventions with immigrants this points towards examining evidence from other high-income countries which may have had a longer history of HIV/AIDS prevention programs for immigrants from developing and middle-income countries.

Chapter 3 Research aims and the research question

3.1 Primary and secondary HIV/AIDS prevention interventions at group and community levels with immigrants in high-income countries

Targeted approaches have been utilised in primary and secondary HIV prevention interventions with immigrants in many high-income countries. These approaches include interventions with the 'general' immigrant population, [108] or specific populations within immigrant communities such as gay men, [104] injecting drug users [109] and women. [110] A preliminary search of the literature found few reviews or secondary accounts that analysed and synthesised insights into group- or community-level HIV interventions with immigrants in high-income countries. One systematic review protocol was found initially [111] and some related reviews of behavioural HIV interventions which touched on immigrants, usually Latinos and Asians in the USA, as part of their populations of interest [6 17 112 113] and a review of interventions with African immigrants in the European Union. [114] Typically these reviews, which were often defined around outcome measures and study design criteria, reported on the dearth of studies which evaluated interventions with immigrant and ethnic minority populations. [6 17 112 113 115] As we have already noted it is generally accepted that interventions will be more effective if they are culturally appropriate to the population they serve [12] and there are a range of ways to anchor interventions in immigrant community experiences and values to address cultural appropriateness. [116] While many of the reviews touched on the adaptation or tailoring of the interventions to address cultural appropriateness only one addressed in any detail the mechanisms by which this cultural appropriateness was achieved for interventions which were included in the review. [113]

As noted earlier, in the context of emerging trends of immigrants making up a greater proportion of people with HIV in high-income countries [5] there is a growing need for reviews of evidence that might guide targeted and culturally appropriate HIV health promotion interventions for immigrants in these contexts. It is particularly important in light of the dearth of studies meeting the criteria of existing reviews of evidence in this area [6 17 112 113 115] to move away from the narrow focus of 'traditional' systematic reviews that often see study design and outcome measures as the key inclusion criteria and attempt instead to gain insights into the processes, theories and mechanisms underpinning interventions with immigrants which might inform policy development. As Petticrew [117] notes "policymakers … are less interested in evidence we don't have, than in which direction the evidence is pointing (with suitable caveats)" (p. 411). In areas

where there are gaps in the evidence base we may have to accept 'lower' forms of evidence in our efforts to uncover the mechanisms that might be contributing to outcomes. [118] The focus and task of the review then becomes one of integrating the available evidence, whatever its limitations. [117] In the context of the available evidence of HIV prevention interventions with immigrants we also need to try to uncover mechanisms which might be transferable across immigrant populations in a high-income country such as Australia. Australian policy makers are challenged to address a relatively small number of cases across multiple immigrant communities from developing and middle-income countries. [8] For example, no single Asian or sub-Saharan African country of birth accounts for even 1% of HIV notifications in Australia for the period 2003–2007, yet collectively these two regions of birth account for 15% of overall HIV notifications and people born in sub-Saharan Africa have the highest age-standardised incidence of HIV. [8] Thus to be relevant to the current context, policy makers and practitioners in Australia may favour a review of evidence which points, with caveats, to mechanisms which are generalisable across multiple immigrant populations and ethnicities.

3.2 The research question

This dissertation aims to address a research gap around targeted approaches to primary and secondary HIV prevention interventions with, and for, immigrant populations from developing and middle-income countries living in high-income countries. The dissertation aims to address this research gap by reviewing and analysing existing primary studies. The scope of the research is thus a review of the evidence around the 'population' of immigrants and the 'problem' of HIV/AIDS. The broad research question that I seek to address is – 'How and why do targeted HIV/AIDS interventions for immigrants in high-income countries work (or not), for whom do they work, and in what contexts?' – with the focus on primary and secondary prevention interventions. Implicit in this broad question of targeted approaches is a consideration of the cultural appropriateness of these interventions for immigrants themselves. Thus the broad research question points towards a review of two 'types' of studies to contribute to the research synthesis in this dissertation: intervention studies and studies which explore the views of immigrants themselves, including HIV-positive immigrants. Here I was guided by the standpoint that integrating different perspectives, those of 'experts' and 'lay' people, can enhance a review of evidence. [119] The broad research question also points towards an analysis of the underlying theories – the 'how and why' – of interventions with immigrants. This broad 'how and why'

research question has direct applicability to current public health policy and practice in Australia, in attempting to increase the understanding of ways to address HIV prevention at a time of increasing priority of the 'problem' of HIV/AIDS among immigrants. [9] Finally, in order to retain the focus of the dissertation firmly in the domain of public health, the focus of the research is on group- and community-level interventions, [14 100] interventions that go beyond working with individual immigrants which is more the domain of 'health care' interventions.

The primary audience for this research dissertation is HIV/AIDS policymakers, researchers and practitioners in Australia. However, the findings of the dissertation may have relevance to a wider audience of HIV/AIDS policy makers in other high-income countries. A potential strength for the findings of this dissertation to transfer into practice is the evidence that these audiences may be receptive to reviews of evidence that help to answer questions of 'What works?' in health promotion practice. [120-124] In addition, these audiences may be less concerned with the research bias or the supposed hierarchy of evidence of primary studies, as long as the review makes the best use of the available evidence whatever its limitations may be. [117 123] The review of evidence will be guided in part by input from policy makers, researchers and practitioners – 'experts' – and the 'lay' perspectives of immigrants themselves as reported in the views studies. The goal of the review is to uncover explanations across interventions with immigrants as to how and why they work (or not) for particular groups in particular contexts and refine the underlying program theories that operate in these interventions. [16]

These considerations outlined above were central to an iterative process which led to the identification and refinement of the research aims and objectives and research question for this dissertation.

This process resulted in the research topic of:

Targeted approaches to HIV/AIDS prevention among immigrants from developing and middle-income countries living in high-income countries: a realist review of research relevant to the development and implementation of culturally appropriate interventions

while the primary question this dissertation seeks to explore is:

What are the key program theories or mechanisms for cultural appropriateness operating in primary and secondary HIV/AIDS prevention interventions at group and community levels among immigrants from developing and middle-income countries living in high-income countries?

3.3 Research aims

- Identify an appropriate research methodology and methods to answer the research question
- Identify key program theories for explanation in the review of evidence
- Establish frameworks to allow for external input to the research
- Search for primary data related to the key program theories in the review
- Appraise and extract data from primary studies found
- Analyse and synthesise the data to refine program theories
- Enhance the potential for the research to influence policy and practice by using a planned approach to research transfer

Section Two APPROACH

Chapter 4 Methodology

4.1 Introduction

What constitutes research and evidence is a vexed question in public health interventions. The absence of consensus on the nature of research and evidence in public health interventions is thrown up in part by the activities and the underlying philosophy of health (and illness) in public health interventions but is arguably more fundamentally contested through the adoption or rejection of research paradigms that differ at their core on the nature of the study of reality (ontology), the study of knowledge (epistemology) and the principles of how research should proceed (methodology). [125(p.543)] A paradigm encapsulates beliefs, assumptions, values, methods and philosophies. [125] Frequently cited research paradigms after Guba and Lincoln (1994) are positivism and post-positivism, critical theory and constructionism. [60(p.125) 125] It is common in the literature to see these four research paradigms characterised as representing two different fundamental paradigms: the realist (or objectionist or conventional) or the relativist (or constructionist or constructivist) paradigms. [60 126] The realist paradigm adopts a position that there is 'one' reality 'out there' which can be described independently of the researcher. [126 127] In contrast the central relativist paradigm sees truth and knowledge as socially constructed, with the researcher seen as part of the reality under investigation and knowledge being dependent on time and place. [60] In public health research Baum [60] observes that this divide can be viewed as a debate between the medical sciences and the social sciences.

While some researchers are more drawn to one or other of these two research paradigms it is perhaps more common for contemporary research in public health to adopt a pragmatic approach and to determine the research methodology based on the kind of questions which the research is attempting to answer. [16 60 121] The research question of this dissertation was framed to inform an Australian audience of what could be learned from the interventions and experiences of immigrants in other high-income countries in terms of HIV prevention. This implied that the best path to follow was a review of existing evidence. Attempting primary research to address this research question across multiple countries, immigrant communities and contexts would likely

have been beyond the scope of this doctoral dissertation. The approach to determining the appropriate methodology for this review of evidence of primary and secondary HIV/AIDS prevention interventions with immigrants was guided by a critical appraisal of three interrelated strands implicit in the research question: the nature of context in the interventions being reviewed; the nature of the evidence from these interventions which was likely to be available for synthesis in the review; and the nature of the potential 'results' of this review to contribute to public health policy and practice in this area. I will now address each of these related strands in turn.

4.2 The nature of context in the interventions being reviewed and how they 'work'

A fundamental goal of public health interventions is to influence human volition across communities and populations, through employing a diverse range of policies and strategies to equip, mobilise and enable people with the means to create their own health, [60 98 125 128] in recognition that "health is won by people themselves". [98(p.135)] Maximising human volition for the net benefit of a community or population is a key goal in public health interventions and human variation is part of the lifeblood of public health interventions. [125] This is in stark contrast to the nature of interventions in the biomedical sciences which generally lead to experimental research designs which attempt to minimise the effects of human volition in the intervention so as not to confound the research findings. [129]

Understandings of the social determinants of health have strongly influenced the guiding frameworks that underpin public health in recent decades so much so that in much of the literature it is often referred to as the 'new public health'. [60 98] The 'new public health' sees the causes of illness and the enhancers of health quite differently from a traditional epidemiological approach which focuses on risk factors. [60 130] As Catford [98] notes the prerequisites for health in the World Health Organisation policy of Health for All include "peace, a stable ecosystem, social justice and equity, and resources such as education, food and income" (p. 141). In recent years the extensive work of the World Health Organisation's Commission on the Social Determinants of Health has added to the central arguments that health is created or retarded in wider social contexts [69] which highlights the importance of these wider contexts in reviewing public health interventions.

Thus an intervention, or set of interventions, may succeed or fail depending on the wider social systems in which they are implemented. The interventions may in fact be explicitly attempting to influence, or at the very least be taking into account, some of these social determinants in order to support changes in behaviours. [129 131] Which is not to suggest, as Perdiguero et al [132] note, that public health is primarily concerned to motivate the 'will' of individuals and to modify 'unhealthy' behaviours. Rather the goal is to influence 'ways of life' which are shaped by wider cultural, social, economic and political conditions and which are reproduced in the daily lives of communities [132] – in other words to attempt to influence social norms. [133] Pawson [15] contends that there are four contextual layers in social interventions ranging from the individual capacities of the key actors, through to the interpersonal relationships supporting the intervention, the institutional settings and the wider infrastructure. Thus the goal of research of public health interventions should be to attempt to understand the many and complex forces at work that produce health and prevent disease [130] rather than discounting evidence on the basis of notions of rigour and relevance borrowed from other scientific disciplines. [129]

A recognition of context also impacts on the nature of causation in the effects or outcomes of public health interventions. Different perspectives on causality impact on what conclusions are drawn, and on whether a causal relationship has been established in public health interventions. [125] Bonner [127] used an analogy to explain that a public health intervention is not a 'billiard ball collision' that 'causes' something to happen to 'make' people change. This is what Pawson [134] calls the successionist model of causality in interventions which is often dominant in biomedical interventions and clinical trials. "Rather people generate change in specific contexts through their actions and interactions on the basis of their interpretations, powers, capacities and liabilities." [127(p.90)] So if we frequently observe an outcome in a population after an intervention Sayer (2000) argues it does not necessarily follow that the outcome observed is as a result of the intervention – "what causes something to happen has nothing to do with the number of times we see have observed it happening". [127(p.83)]

Pawson and his colleagues [15 134] forcefully argue for a generative model of causality in complex social interventions. Using the generative model of causality, he argues that to infer a causal outcome (O) between two events one needs to understand the mechanism (M) that connects them and the context (C) in which the mechanism occurs. [134] Using the example of the properties of

gunpowder from the physical sciences, he argues that researchers would not claim that repeated observations of applying a spark (X) to gunpowder and subsequent explosions (Y) as the basis to infer a causal relationship. [15] Instead the outcome (O) has to do with the properties of gunpowder when heat is applied (M). [15] And the explosion, or failure to explode, depends on the context (C) such as the presence of oxygen and the gunpowder not being damp. [15] Thus any changes observed among immigrants who have attended a series of HIV education sessions delivered by an ethnically matched facilitator are not due simply to the education sessions per se but rather the changes could be attributed to a range of mechanisms such as the facilitator being seen as a trustworthy role model or the sessions facilitating peer reinforcement between participants for HIV prevention behaviours. Social or public health interventions facilitate actions or behaviours in populations and work as Pawson and others [135] see it "by offering resources designed to influence their subject's reasoning. Whether that reasoning, and therefore action, changes depends on the subject's characteristics and their circumstances" (p. 2). Using this logic, interventions work because of what they are and attempts to gain a fuller understanding of the effectiveness of an intervention requires questions that unpack what goes on within the intervention – the generative mechanism – that influences people to change. So in HIV prevention interventions with immigrants we need to understand the inducements to change offered by the intervention (e.g., you will worry less if you know your HIV status) and they can only work as intended if participants go along with these inducements (e.g., agree with the proposition that an HIV test will lead to reduced anxiety about HIV).

Choosing to focus on the mechanisms or theories of interventions leads to another distinction which needs to be drawn on the nature of interventions especially in reviews of evidence – namely the distinction between implementation theory and program theory in ideas developed by Weiss. [136] [137] In her original paper Weiss [136] found that many evaluations focused on implementation theory – usually some version of inputs, activities, outputs, and outcomes with arrows, indicating steps, in between. These evaluations neglect what she calls "the program theory" (p. 73) or the mechanisms underlying the arrows between each step in the program's implementation. [136] Program theory focuses on "the mechanisms that intervene between the delivery of program service and the occurrence of outcomes of interest." [136(p.73)] If a program fails it could be that the planned activities were not carried out (implementation failure) or that the activities failed to bring about the intended effects (program failure). [136] [138] Program theory can be gleaned from the social sciences literature, the beliefs of program stakeholders [137] and even by

using the implementation theory to interrogate the steps of process along the pathway to program effects. [136] Here the work of Weiss [136 137] dovetails with that of Pawson [15 134 135] around a research methodology – realist synthesis – in reviews of evidence that aim to "build explanations across interventions or programmes [sic] which share similar underlying 'theories of change' as to why they work (or not) for particular groups in particular contexts". [16(p.12)]

4.3 The nature of the evidence available for synthesis

There is general agreement that reviews of public health interventions are challenging especially in efforts to measure outcomes. [121] Koelen [129] sees "the intervention and outcome dilemma", "the number dilemma" and "the control group dilemma" (pp. 257–258) as three of the central challenges. Firstly, reviews of biomedical research are based on an assumption that the independent variables (the interventions) and dependent variables (outcomes) are able to be defined in advance and with the outcomes being able to be measured in some way. [129] Outcomes in public health interventions are harder to evaluate in this way as it is often difficult in a program that is emergent, and attempting to be participatory, to isolate and predict in advance what individual activities may have contributed towards any observed change in outcomes. [129] The second challenge is that changes at societal, political or environmental levels, which may be a key goal of a program, are inherently harder to measure which may lead to studies that attempt to assess success or failure of a program overlooking and ignoring outcomes "in less countable areas". [129(p.258)] Pawson [15] sees that even in those areas where outcomes are 'countable' the focus is often on regularities rather than in his view "the totality of outcomes – successful, unsuccessful, bit of both – that may act as the initial empirical guide for future optimal locations [for interventions]" (p. 22). Pawson [15] asks us to focus on outcome *patterns* rather than outcome *regularities* in reviews of complex social interventions. The third and final challenge is that public health interventions happen in the field so that multiple factors can be influencing the outcomes under consideration. It is rarely possible to be able to use a control group, especially a randomised control group, as a solution to this dilemma. [129] Pawson [134] argues that attempts to use a control group would in any case be futile given that social interventions are always carried out in the midst of other programs that are themselves in states of flux and change. He argues that this makes the evaluations of interventions using "clean policy on/policy off comparison impossible". [134(p.29)] Besides, the goal is to carry out effective health promotion not effective

research per se. [129] These challenges have led to a consensus that a diverse range of research methods and outcome variables is preferable when carrying out reviews of public health interventions. [121 129 138 139]

Research evidence, especially what constitutes the 'best' research evidence, is a disputed issue in the evaluation of public health interventions. The divergence on notions of 'best' evaluative research evidence may be driven by overarching research paradigms, or more particularly from issues arising from the tensions between evaluation methods not being able to detect the success or failure of an intervention and the relative success or failure of the intervention itself. [138] In addition, there are vigorous debates in the literature that question the validity of the relative weight and/or notions of a hierarchy of evidence in evaluating and reviewing complex social interventions. [140] These questions are also prominent in the sexual health promotion field, a field of relevance to this review, where the notion of experimental research as the 'gold' standard of evidence and study design is comprehensively refuted by some [141] while being defended by others [142] as being one of the best measures of effectiveness of sexual health interventions. Kippax [141] argues that experimental research designs are often antithetical to the goals of sexual health interventions in that they treat people as individuals rather than as social beings. While she concedes that it is possible to design interventions that can be experimentally evaluated she argues that this tends to "render the interventions and/or the outcomes trivial". [141(p.19)] Bonnell [142] concedes this point to an extent but argues that experimental designs should be part of the armoury of evaluating sexual health interventions and that when experimental designs are not possible then other research designs "despite providing less clear evidence on effectiveness, *must* suffice". [142(p.13)] This perspective encapsulates arguably the dominant perspective in the literature – that non-experimental research designs lead to, at best, second-order evidence of effectiveness in reviews. Many researchers question this reliance on study design as the primary marker for the validity or utility of a study and its subsequent inclusion in a review. [140] A way forward is to look again at the kind of questions which the intervention research is attempting to answer. Intervention research is often attempting to answer 'how and why' a program works and Bonner [127] critiques evaluation which privileges experimental research designs for using the same logic and methods of the natural sciences to answer these vastly different 'how and why' questions of social interventions. Consequently multi-method research, which may include experimental research, is more likely to offer these kinds of "explanatory accounts" [127(p.81)] of interventions needed to enhance policy and practice in some areas of public health.

Handbooks for carrying out systematic reviews of public health interventions acknowledge the researcher should expect heterogeneity of evidence. [121 124] This evidence may be diverse in terms of the strategies and processes employed in the interventions, the theories used and the outcomes observed, the more proximal and long-terms goals envisaged, and the kinds of study designs and data, both quantitative and qualitative, available for review. [121] In addition, consistent with the multidimensional nature of public health and the centrality of health being won by people themselves, [98] there is a growing acceptance of the benefits of including lay perspectives in reviews, especially to address questions of the appropriateness of interventions to individuals and populations.[16 107 119 121 125 143] In essence, lay perspectives can shed light on what aspects of the intervention outcomes are valued by the participants or targets of the intervention and shed light on any unintended outcomes, both positive and negative. [119] Studies which focus on lay perspectives and systematic methods to find, analyse and synthesise these perspectives in reviews of public health interventions have been pioneered by researchers at the EPPI-Centre in the United Kingdom. [107 144 145] Some critics have raised concerns about the legitimacy of synthesising disparate evidence. For example, some see aggregating qualitative studies as destroying "the integrity of individual studies". [16(p.7)] Similarly, while the combination of quantitative and qualitative research methods in primary research is gaining acceptance there are those who question if synthesis of qualitative and quantitative research is feasible or legitimate. [16] Despite these lingering questions, the definition of evidence-based health promotion being adopted by international bodies such as the World Health Organisation is expanding to include formal and informal research evidence. [146] The momentum of health promotion research seems to favour the incorporation of disparate kinds of evidence into decision making in public health policy even if there are still uncertainties as to the validity of the methods that are emerging to make this task a reality. [125 139] This is especially pertinent in areas where there is likely to be a paucity of evidence such as in this review of the evidence around HIV/AIDS interventions with immigrants. As Petticrew [117] notes, sorting through evidence for the 'wheat' and the 'chaff' is fine in areas where there is a lot of evidence to sift through but he argues for using the disparate evidence we already have to further the evidence base in overlooked areas of public health. A review of evidence, even if it is not strictly a systematic review, can contribute to wider debates in public health and answer important research and practice questions. [147]

4.4 The nature of the 'results' of a review of this kind

The desire for reviews of evidence has grown in recent decades with an increased focus by decision makers in public health on the need for evidence-based policy and practice. In the past, literature reviews, which were largely descriptive accounts of prior primary research, might have sufficed as the evidence on which to base decisions. [125] More recently systematic reviews have taken the mantle of the 'gold' standard around 'best' evidence to inform policy and practice, alongside continuing debates as to what evidence-based policy and practice really is. [123] Systematic reviews largely retain the review function of literature reviews, a process of gathering the available primary evidence, and adding a synthesis function, a process where the gathered evidence is extracted and brought together in some way. [16] Systematic reviews are usually explicit about the scope of the review, explicit about the search strategies for primary studies, the criteria for including and excluding primary studies and the process of extracting study data and synthesis. [16] In so doing the premise is that other researchers could follow the logic and process of the review and reach the same conclusions [125] which can give users of the review more confidence that the review is an objective overview of 'what works'.

The enthusiasm for this central premise and the promise of systematic reviews is tempered with the realisation that all manner of interventions have been evaluated in the past with questionable impact on subsequent program design. [15] Pawson [15] sees two key dilemmas contributing to this sub-optimal influence of systematic reviews. The first dilemma relates to the nature of accumulation of evidence, 'many heads are better than one', which makes sense if a statistical method is used to pool quantitative outcome measures, but can hardly be employed to 'add' quantitative and qualitative evidence from diverse sources together. [15] The second dilemma arises from simplistic notions of the policy-making process, which I will return to in more detail below, that positions systematic reviews as the primary evidence likely to be used before decisions are made – 'the cart before the horse' – when the reality is that policy making is "an unregulated chariot race of carts and horses". [15(p.12)]

In the area of HIV/AIDS prevention, common to many other areas, systematic reviews of sexual health interventions have been critiqued for a bias towards including interventions that have been evaluated using randomised controlled trials, and those few trials which did meet the reviews' inclusion criteria have tended to be interventions with individuals or small groups. [141] This is

characterised by Ogilvie et al [140] as "methodological imperialism" (p. 886) which may undermine rather than enhance the evidence base for population-based interventions. In any case, previous systematic reviews of sexual health interventions have, according to some, [141] offered little in the way of evidence for the effectiveness of any interventions. More generally, systematic reviews can lead to a distortion of 'what works' through publication bias as primary studies that have the highest statistical effect are more likely to be published and therefore be found in search strategies. [125]

As noted earlier, systematic reviews of evidence of one kind or another are now widely seen as a cornerstone of policy making and evidence-based policy and practice. But this throws up questions around what policy making is and the interactions between reviews of evidence and policy making. These questions are an important context which impact on expectations around how the 'results' of systematic reviews are thrust into the policy-making sphere as well as informing the methodology underpinning the processes of reviews of evidence in general, and this review in particular.

Policy making has been defined by Dye (1984) as "whatever governments choose to do and not to do". [148(p.2)] The notion of policy-making 'stages' with decision makers empirically identifying a problem, canvassing options, and formulating an optimal solution which is then evaluated has been largely displaced by recognition that policy making is a more convoluted, diffuse and haphazard process. In this view of policy there are no simple 'stages' because of the "multiple sources of causation, [and] feedback, and the sheer complexity of what is going on [in the political process]". [149(p.483)] In a similar vein, Weiss [150] contends that research, what she calls "information", is just one of the three streams that contribute to policy making with the other two being "ideology" and "interests" (p. 213). Taking this policy-making context into account has led Pawson [15] to question the union between 'knowing' or 'evidence' and 'doing' or 'policy'. In particular he questions the notion that 'doing' is the domain of the political structures, leaving 'knowing' to researchers and academics. [15] While it is perhaps easier to accept that the 'policy' side of this partnership might be influenced by streams other than evidence, Pawson [15] urges us to be equally cautious and have a healthy skepticism of the 'evidence' side of the coin. As Oliver [151] argues, those seeking to influence policy agendas would do well to be mindful of the science and the politics of public health issues so as to "better anticipate both short-term constraints and long-term opportunities for change" (p. 196).

Thus the evidence that policy makers need and bring to bear in decision making may include research evidence but may also include a wider array of evidence to invest or disinvest in a particular program. [120] It does not follow that 'good' evidence leads to 'good' policy nor does it follow that little or no evidence leads to 'bad' policy. Petticrew and his colleagues [123] examined the evidence policy makers need and concluded, in part, that they valued what they called a 'mixed economy of evidence', made up of experimental and non-experimental evidence, to inform policy questions. The policy makers in the study were encouraging of research methods which sought to marshal this diverse evidence of variable 'quality', even with many gaps, into a coherent synthesis. [123] Methods for marshalling this diverse evidence to inform health promotion policy and practice into a coherent synthesis are relatively new and underdeveloped [16] but are critical to advancing understandings of appropriate public health interventions.

This less charted course in reviews of evidence is not only concerned with notions of effectiveness. This stems from the position that effectiveness is necessary, but not sufficient, to improve health as changes to health will ultimately be strongly influenced by people's own beliefs, wishes and priorities in the 'real world'. [143] Neither do these reviews seek to emphasise narrow definitions of outcome measures, nor proscriptive notions of study designs in seeking primary data, nor seek to answer only questions of 'What works?' in interventions. Rather these reviews of evidence can endeavour to answer 'How and why it works?' with the emphasis on processes and mechanisms of interventions. [120] [136] In addition, if these reviews of evidence are informed by a realist methodology they can seek to answer 'How and why it works *for whom* and in *particular contexts and settings*?' [134] These reviews can benefit from examining a range of evidence, both quantitative and qualitative, and methods for finding, appraising, analysing and synthesising these quite different forms of evidence are continually being developed and refined. [15] [16] [134] [140] [144] [145] [147] [152-154]

Reviews of evidence can include from the outset an explicit consideration of research transfer by taking account of the review's audience and the current policy context. Decision makers may be receptive to the findings of systematic reviews that help to answer questions of 'What works?' in interventions and receptive to reviews that point towards pragmatic, politically astute and potentially replicable options for practice. [120-122] The timeliness of the reviews may also enhance the potential for research transfer. While timeliness is a slippery and subjective concept that is

largely outside of the control of the researcher (and even the policy maker), it is often regarded by decision makers as critical to the potential for research transfer of the findings of reviews. [120] [155] Linked to timeliness, and perhaps more within the control of researchers, is that policy makers have indicated that they want researchers carrying out reviews to have a clear understanding of the current policy context. [123] Mays et al [16] contend that the stage that policy development has reached in the topic area should also inform the methodology of the review. An intervention or set of interventions at an early stage of policy development might benefit from a review which attempts to develop 'program theory' whereas an area where policy development is more advanced might benefit from a review which evaluates the effects of the policy in specific contexts. [16] In addition, reviews which allow for a dialogue between the researcher(s), practitioners and decision makers have been perceived as contributing to research transfer in other contexts. [119] [120] [124] [156]

While acknowledging the strengths of these approaches in reviews of evidence there are a number of fundamental limitations to these less 'traditional' reviews. One of the keenest limitations is the likelihood that these kinds of reviews will not produce specific answers to particular decision needs – leading to a limit on how far-reaching the recommendations can be. [15] [16] [134] Moreover, there is often a limit on the territory the review can cover. For example, if the focus of the review is on the mechanisms of the interventions there is a limit to the number of program theories that can be assessed in a single review. [15] [134] [136] Finally, there is a limit on what information can be retrieved – the contextual information that a realist review especially values may not be available. [15] [134] Thus, the "progress made in a review is not one from ignorance to answer, but from some knowledge to some more knowledge" [134(p.32)] by testing the assumptions of a program theory to see which ones hold and where they break down and, in doing so, build a more detailed program theory. [127] [134] [136] This aspiration encapsulates the goals of this review of primary and secondary HIV prevention interventions and the approach taken in this review to answer the research question.

4.5 The approach taken in this review to answer the research question

This analysis and synthesis of evidence is primarily guided by the relatively new methodology of a realist review – in the broad stable of systematic reviews – that has been developed by Pawson and his colleagues. [15] [134] [135] Mays et al [16] categorise realist reviews as one of the "narrative approaches" (p. S1.11) to systematic reviews that are particularly suited to integrating

quantitative and qualitative evidence. As the research question evolved in the early stages of this review it became clear that 'traditional' approaches to systematic reviews, which often focus solely on questions of effectiveness and predefined outcome measures, were unsuited to a research question that demanded a fuller appreciation of the nature of public health HIV/AIDS interventions with immigrants in high-income countries. At their core, and consistent with the central tenets of public health, [60] these interventions attempt to influence human volition and social norms among immigrant communities while being mindful of the wider social determinants that impact on immigrants' abilities to promote their health and prevent HIV/AIDS. A realist review methodology embraces this complexity in the sense that it sees opportunities to glean some explanations from the different reactions that different immigrant communities might have to HIV/AIDS interventions. [15] In addition, these HIV/AIDS interventions with immigrants are embedded in multiple social systems in different high-income countries. Again, a realist review methodology can see possibilities for acknowledging these different contexts in the synthesis of evidence which, while challenging to analyse, are nonetheless necessary to develop greater understandings of successes and failures (and all points in between) of HIV/AIDS interventions with immigrants. [15]

A preliminary scan of the literature in the early stages of this review indicated that HIV/AIDS interventions with immigrants in high-income countries were relatively emergent. The preliminary scan also revealed that most interventions that were reported in the literature had developed or adapted the intervention to make it 'culturally appropriate' to immigrant communities. This background helped to shift the primary purpose of this review towards the mechanisms or theories that underlie HIV/AIDS interventions with immigrants – interventions that were largely based on implicit theories as to how they achieved 'cultural appropriateness' for immigrants. Consequently, the primary purpose of this review of evidence focused on insights into whether these implicit intervention theories worked as predicted which Mays et al have suggested [16] as a useful focus for reviews of interventions at an early stage of policy development. The emerging focus of this review was also in line with a realist review methodology with Pawson [15] categorising reviews of "program theory integrity" (p. 94) as one of the four prime areas to which realist reviews are suited. This focus on program theory as mentioned earlier is one of the areas where a realist review methodology dovetails with the 'theory-driven' family of evaluation methodologies. [135]

Here I will briefly outline the approach taken in developing the program theories for this realist review of evidence. I will describe the development of these program theories in more detail in Chapter 6 (6.1 and 6.2). In the early stages of this review, I was guided by the work of Weiss [136] [137] who articulates a methodology for evaluating interventions with program theory as the focal point. In an early paper, Weiss [136] articulates an approach to evaluation which uses the reactions of program participants to program activities to develop a hypothesised implementation 'chain' of events and, through this, attempt to build more detailed program theory. In a later paper, Weiss [137] outlines four criteria for selecting program theories from the multitude of candidate theories that could potentially be examined in evaluating an intervention or set of interventions. Firstly, she advises to focus on theories derived from beliefs of people associated with the program. [137] In this review, this might be the beliefs that program stakeholders may express in studies about the steps that have to be taken for immigrants to gain opportunities to prevent HIV/AIDS transmission. A second criterion is what she calls the "plausibility" (p. 40) of the intervention to do the things the program theory assumes. [137] Thus if program stakeholders report on the critical importance to the success of the program of matching the ethnicity of program staff with the immigrant participants but have not reported hiring any ethnically diverse staff then this theory is not really operating in this program and is a lower priority candidate for the evaluation. The third criterion for selecting candidate program theories relates to the lack of knowledge in the program area about the limitations of the program theory. [137] Weiss [137] uses the example of the widely held view that information provision influences knowledge, attitudes and the behaviour of program participants. In this review, this information provision might take the form of translating and distributing health information brochures into community languages as a way to reduce HIV/AIDS risks among immigrants. The final criterion put forward by Weiss [137] relates to the centrality of the candidate program theory to the program. In this review matching the ethnicity of staff delivering the intervention with the immigrant target group may be such a widely held assumption in intervention studies that it may warrant it being one of the program theories to focus on in the review.

This review also draws on the approaches to systematic reviews developed by the EPPI-Centre in the United Kingdom. [124] In particular, the approach and methods which the EPPI-Centre developed to bring together intervention studies alongside the lay perspectives in systematic reviews of health promotion. [107] [144] [145] The decision to specifically include lay perspectives – what Harden and her colleagues [144] call "views studies" which place "people's own voices at the

centre of the analysis" (p. 794) – stemmed from a desire to harness evidence from lay perspectives and the fundamental place of cultural appropriateness in the research question. Incorporating lay perspectives in a review, it has been argued, can shed light on areas where intervention outcomes that are valued by program stakeholders may not be valued by program recipients [119] and on understandings of relevance and cultural appropriateness of programs. [107] Finally, the approach to this review was also tempered by a recognition of what was feasible in terms of informing policy making and a consideration of ways to enhance research transfer. Thus the review, in line with the spirit of realist reviews, adopted a goal of 'enlightenment' while being mindful that research transfer has a chequered past. [135]

In summary, the approach to determining the appropriate methodology for this review of evidence to inform an Australian audience of the key theories operating in HIV/AIDS prevention interventions with immigrants was guided by three strands implicit in the research question: the nature of context in the interventions being reviewed; the nature of the evidence from these interventions which was likely to be available for synthesis in the review; and the nature of the potential 'results' of this review to contribute to public health policy and practice in Australia. This research is a realist review of evidence [15] which draws on the work of Weiss [136] to focus on the theories operating in HIV prevention interventions with immigrants. The review of evidence also draws on approaches from the EPPI-Centre in the UK [107] to analyse and synthesise intervention studies alongside the lay perspectives of immigrants in views studies.

Chapter 5 Methods

This chapter sets out the methods used to systematically search for studies to answer the research question. It also outlines how the research process was augmented at critical stages by external input from HIV/AIDS policy makers and practitioners from Australia and other high-income countries.

5.1 Systematic searching for primary studies

The validity of a 'traditional' systematic review largely hinges on the comprehensiveness of the search strategies to uncover as much relevant published evidence as possible. [107 124 125 154] "What can be synthesised depends on what is found … [and] neglecting certain sources of research studies may result in reviews being biased." [124(p.40)] The centrality of this tenet is challenged by Pawson [15 135] in realist reviews where he questions the existence of a finite set of relevant studies of complex social interventions to be defined and found. In part he argues that a realist review should instead follow a purposive sampling method, "aiming to retrieve materials purposively to answer specific questions and to test specific theories". [135(p.20)] While this is a plausible approach I was conscious of the span of countries and locations needed to uncover sufficient evidence, and the time limitations of this dissertation led me to follow a more 'traditional' and systematic approach in my searches augmented by some purposive sampling strategies.

The first step in developing the search strategies was to focus on the underlying purpose for the review and develop 'an answerable' research question. [121] I used a variety of approaches for an initial scoping search starting with relevant studies that I already had to find related studies either through checking reference lists or by checking for other citations by the same authors on electronic databases. Following the recommendations of the Centre for Reviews and Dissemination in the UK and others, [135 157] I carried out a background search of the literature to determine if any systematic reviews had been carried out on HIV/AIDS interventions with immigrants in high-income countries. I searched several databases of systematic reviews including the Cochrane Collaboration, the EPPI-Centre, the Centre for Reviews and Dissemination and the Campbell Collaboration which yielded some related systematic reviews in HIV/AIDS [6 107] but no review in the topic area other than a related protocol on the Cochrane Database for Systematic Reviews. [111] I also did some initial searches on key databases, PubMed,

PsychInfo and Google Scholar, using intuitive search terms to uncover studies that were relevant to my topic area. This preliminary search was designed to get an idea of the size of the available literature and to get 'a feel' for the literature [135 157] that was available on HIV/AIDS interventions with immigrants and quantitative and qualitative studies of the views of immigrants. This search assisted in the development of the research question for the review and was an iterative process of refining ideas that informed the developing research question. [135] This search also gave me very tentative glimpses into the program theories that were at play in HIV/AIDS interventions with immigrants at group and community levels and developed my thinking around the underlying purpose of the review.

The primary source for locating evidence today is electronic databases, supplemented to a lesser extent by internet searches. The databases vary in terms of the studies indexed on them and it is recommended in reviews of evidence in public health to choose a number of databases to maximise the opportunity of finding relevant evidence. [121] There is a consensus that database searching for evidence in many areas of public health is more difficult and time-consuming than in, say, the biomedical sciences, due to the diversity of interventions, study designs, outcomes measured and populations targeted. [121 152-154] This diversity has a bearing on the consistency of terminology used in public health and, consequently, on the consistency of the indexing of studies on electronic databases [152] as each database has its own controlled vocabulary – the indexing terms. [121]

The next step was to determine which databases to use for searching for the primary studies. In this I was guided by the databases used by researchers in related systematic reviews of HIV/AIDS interventions [6 107] and by looking at lists of databases recommended in systematic review handbooks. [121 157] In addition, I was guided by a study of effective search strategies by Harden and her colleagues [154] and a related report by Peersman et al [124] of a systematic review of the effectiveness of sexual health promotion interventions. The study [154] and the report [124] provided an analysis of the yields of searching strategies across five databases – Medline, PsychLIT, ERIC, Social Sciences Citation Index and the Cochrane Controlled Trials Register – and concluded that searching across a number of specialised databases (e.g., a medical and a social science database) was critical to effective searches for primary studies. Consequently, I chose to conduct searches on PubMed, CINAHL, PsychInfo and Sociological Abstracts for this review in light of the guidance in the literature [121 124 157] that having 'a mix' of databases

maximised the opportunity to find primary studies. When I came to use Sociological Abstracts I discovered that I could simultaneously search Social Services Abstracts and two lesser known databases: ERIC – an education database which had been searched in a systematic review of sexual health interventions [154] – and PAIS – a public affairs database which, while not referred to in the literature I had reviewed, I hoped might assist in gaining access to relevant administrative thinking or policy documents. Consequently, in four search strategies I was searching seven databases – PubMed, CINAHL, PsychInfo, Sociological Abstracts, Social Services Abstracts, ERIC and PAIS. I added a Google Scholar search in order to enhance the possibility of picking up 'grey' literature which is not usually indexed on these databases.

I then turned my attention to the development of precise search strategies on each of the electronic databases, and developed the search strategy for Google Scholar later. I followed the same process, but developed separate search strategies, for finding intervention and views studies on each of the electronic databases. I was assisted in developing these search strategies by systematic review handbooks which recommend categorising and breaking down health promotion interventions into their constituent 'parts'. I used the categories adopted by the Cochrane Health Promotion and Public Health Field [121] which frames interventions in terms of PICO(T) – Population, Intervention, Comparison, Outcome and Type (of study design) (p. 17). In this review, the search strategies were developed with the 'population' of immigrants, and the 'intervention' of HIV/AIDS prevention at group and community levels. In keeping with a realist review methodology, [15] I did not limit the development of the search strategies in terms of comparisons, outcomes, or types of study design as I primarily wanted to capture studies which could inform program theory in this area to answer 'how and why' questions as well as 'what works' in these interventions. Similarly, the search strategies for views were defined around the 'population' of immigrants, and attitudes towards HIV/AIDS prevention.

Having defined the broad parameters of the search strategies I then needed to develop specific search terms for each database to find studies relevant to the research question. The challenge in this task is often defined in terms of a trade-off between sensitivity (breadth of coverage) and specificity (efficiency of searching) [152] [153] or a trade-off between comprehensiveness with precision. [16] These two goals tend to be inversely related so that a highly sensitive range of search terms will be more likely to find all relevant evidence, but also more likely to find a high number of irrelevant studies, while a highly specific search is more prone to miss key evidence. [124] With

this in mind I followed the methods reported [154] [124] in a systematic review of outcome evaluations of sexual health promotion interventions to assist in building specific search terms for this review.

The starting point was to bring together a 'known set' of primary studies of relevance to the review question following the methods of Peersman et al. [124(p.47)] This 'known set' of 20 intervention studies (APPENDIX A) and 20 views studies (APPENDIX B) was made up of evidence that I was already aware of through my professional background and some studies which were found in preliminary searches of databases described earlier. This method of generating a 'known set' deviated from the methods adopted by Harden, Peersman and colleagues [124] [154] in that their 'known set' was generated randomly from primary studies included in a previous systematic review and their 'known set' comprised 46 studies. In my two 'known sets', I purposively aimed to include evidence from a variety of contexts in high-income countries, a variety of immigrant populations, and a variety of study types and intervention types. I then traced each of these 40 studies back to the four databases using author/title and, if found, I noted the controlled vocabulary with which each study was indexed on that database [124] (APPENDIX A and APPENDIX B). The total number of 'known set' intervention and views studies found on each database ranged from eight to 19 and is reported in detail at APPENDIX A and APPENDIX B. I then scanned the controlled vocabulary used for the 'known set' studies found in each database to generate search terms for pilot searches, which are strongly recommended in the literature, [16] [121] [124] on each database. These pilot searches, eight in all, allowed for an iterative refinement of the search terms for intervention studies and views studies on each of the databases. [152] This took the form of expanding the search terms if the majority of my 'known set' studies that I had already confirmed were indexed on that database failed to be found in the pilot search, or narrowing the search terms, without losing any 'known set' studies, if too many citations were generated. The same process was used to generate search terms for views studies, studies that often employed qualitative methods or a mix of qualitative and quantitative methods, which are increasingly seen as important to include in reviews of evidence. [153] It has been reported that qualitative studies in particular are not consistently indexed on electronic databases making views studies harder to find. [144] [153]

I then implemented final searches on each database, using only controlled vocabulary terms for intervention studies and views studies without adding any database filters like language or

publication year. I had given consideration to restricting the publication year to post-1996, the year in which anti-retroviral treatments began to become widely available in high-income economies, which other systematic reviews in HIV/AIDS health promotion have used. [107] I decided against excluding studies based on this criterion as I considered that this medical advance in HIV/AIDS treatment, while pertinent to my research question could be accounted for in a realist synthesis as part of the wider context of any interventions included in the review. The final search terms used were circulated to a group of international experts – an Expert Reference Group described in detail in the next section (5.2) – to seek their feedback on the comprehensiveness of the search terms themselves and the overall search strategy. The final searches were carried out in November 2007 on all four databases and the screen shots for each of the eight searches are provided for intervention studies at APPENDIX C and for views studies at APPENDIX D.

I developed the search terms for Google Scholar along similar lines. However, I could not rely on indexing terms nor the controlled vocabulary terms from my 'known sets' of studies as these tags are not visible to a user of Google Scholar. Neither was it practical to carry out separate searches for intervention studies and views studies. The search process also included pilot searches to test the number of search results and check if any of the 'known set' studies were found. Then, after progressive refinements, I settled on search terms that yielded at least ten of the 'known set' studies and still generated an overall number of results that was feasible to review by title. The final Google Scholar search was carried out in January 2008 and the outcomes of all database searches and the Google Scholar search strategy are presented later in Chapter 6 (6.3).

5.2 External inputs

I sought external input at critical stages of the research process. I set up an international Expert Reference Group which was made up of researchers I had found in the literature and researchers that I was aware of from my professional background who were contributors to debates about HIV/AIDS among immigrants. I was keen to get representation from a number of different high-income countries and was keen to utilise their expertise and awareness of the literature. Initial emails with an abstract of the dissertation proposal were sent to researchers inviting them to assist me in the research.

The final membership of the Expert Reference Group who agreed to assist was:

- Assoc. Prof. John Chin, Columbia University, USA
- Prof. Varda Soskolne, Bar-Ilan University, Israel
- Prof. Michele G. Shedlin, University of Texas, USA
- Georg Bröring, formerly of the European AIDS & Mobility Project, Netherlands Institute for Health Promotion and Disease Prevention (NIGZ), the Netherlands
- Dr Audrey Prost, University of the City of London, UK
- Dr Henrike Körner, University of NSW, Australia

The Expert Reference Group provided assistance at three key points. The first, as mentioned briefly earlier, was to provide me with feedback on the final search terms and the databases chosen to search for evidence. The Expert Reference Group was emailed a summary of the search terms used and the databases that had been chosen and invited to provide feedback on the comprehensiveness of the overall search strategy as well as the detail of the search terms used. Four of the six members of the Expert Reference Group provided detailed feedback at this stage. Their feedback suggested specific search terms that might be added and one suggestion for an additional database. Each of these suggested search terms was reviewed against the research question and, where relevant, they were checked against the controlled vocabulary in each of the databases and added if needed. In most cases search terms proposed by the Expert Reference Group were in fact narrower terms than the search terms I had used in my final searches.

The second point of input by the Expert Reference Group was to provide feedback on the final set of intervention and views studies to be included in the analysis and synthesis. Two bibliographic shortlists of intervention and views studies were emailed to the Expert Reference Group who was invited to provide feedback on any key studies that may have been missing from the lists. They were also invited to send details of any fuller reports from the 'grey' literature that related to any of the studies included in the shortlists. Four out of the six members of the Expert Reference Group provided detailed feedback on the shortlist of intervention and views studies and this is reported on in the analysis section in Chapter 6.

Finally, I sought input from the Expert Reference Group on a research summary which was designed to enhance the transfer of the dissertation findings into policy and practice. The research summary was developed using the 1:3:25 guidelines recommended by the Canadian Health

Services Research Foundation for writing for decision makers. [158] Thus I developed the Research Summary (APPENDIX K) as a one-page summary of the main messages followed by a three-page executive summary of the research findings.[158]

In addition, at this final stage of the research process, I invited a group of key informants from the primary target audience for the research – HIV/AIDS researchers, policy makers and practitioners in Australia – to provide me with feedback on this research transfer document (APPENDIX K). I specifically invited them to critique whether the Research Summary effectively communicated the research findings to an audience of decision makers.

The final membership of the Key Informant Group who agreed to provide feedback was:

- Lisa Ryan, AIDS/Infectious Diseases' Branch, NSW Department of Health
- Assoc. Prof. Carla Treloar, National Centre in HIV Social Research, University of NSW
- Phillip Keen, Australian Federation of AIDS Organisations
- Assoc. Prof. Lisa Maher, National Centre in HIV Epidemiology and Clinical Research, University of NSW
- Claire Ferguson, HIV/AIDS and Related Programs, South Eastern Sydney and Illawarra Area Health Service
- Barbara Luisi, Multicultural HIV/AIDS and Hepatitis C Service, Sydney

A draft of the Research Summary was sent to the members of the Expert Reference Group and the Key Informant Group. Detailed feedback which was received was incorporated into the final Research Summary (APPENDIX K).

Chapter 6 Analysis methods

The search strategies described in detail in the previous chapter were designed to uncover evidence to test the program theories or mechanisms underlying HIV prevention interventions among immigrants in high-income countries through an analysis of the evidence from intervention studies and studies of the views of immigrants themselves. As mentioned previously, realist reviews of evidence differ from the steps taken in 'traditional' systematic reviews – as in realist reviews of evidence analysis and synthesis tend to occur alongside each other. [15 135] Indeed a preliminary search of the literature to assess what explanatory frameworks are in place for interventions can even precede developing search strategies and is recommended to clarify the scope of the review. [15 135] For clarity I will present the methods used to uncover these initial and more detailed underlying mechanisms in this chapter. In addition, I will also briefly present the findings of these two steps of the preliminary analysis as the final seven theorised mechanisms I uncovered also influenced the appraisal of the relevance and rigour of studies found in searches. [15] I will follow this with detailed sections on the outcomes of the search strategies, the appraisal of the studies found for relevance and rigour, the collation of the final set of intervention and views studies and the process used to annotate this final set of intervention and views studies into a format that facilitated extracting the data for further analysis and synthesis.

6.1 Initial steps in developing program theories

In a realist review of evidence one of the first steps is to assess and develop an explanatory framework of interventions that are being implemented in the field to articulate the key theories to be explored in the review. [15 134 135] Here the goal is to get a 'feel' for the literature and to assist in clarifying the scope of the review by collecting data that "relate not to the efficacy of the intervention but to the range of prevailing theories and explanations of how it was supposed to work – and why things 'went wrong'." [135(p.16)] The search attempts to uncover administrative thinking, policy history, legislative background, and key points of contention that lie behind the family of interventions [15] – in this case primary and secondary HIV prevention interventions at group and community levels with immigrants from developing and middle-income countries living in high-income countries. Sources for these data to assist in uncovering program theories include literature reviews, evaluation studies, discussion papers, and planning documents. There

is no formal procedure recommended for searching for these sources of data in a realist review. [15] However, Weiss [137] suggests the social sciences literature and the perspectives of program stakeholders as two potential key sources of candidate program theories. In the case of this dissertation I had a number of sources which I was already aware of from my professional background and I augmented these sources with others that I found in my initial background search of the literature and pilot searches on each of the databases. I reviewed and analysed these papers and looked for dominant themes as to 'how' and 'why' interventions with immigrants were supposed to work and what limitations they had. A key theme was one where 'cultural appropriateness' or 'cultural sensitivity' was assumed as a key principle or a philosophical stance for interventions with immigrants and ethnic minorities but where these terms were very rarely defined or discussed in detail. [12 159-163]

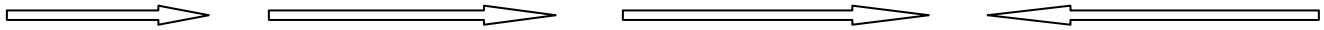
I then reviewed and analysed these papers to explore the dominant activities which might operate in the field of HIV/AIDS prevention with immigrants to develop an initial hypothesised 'chain' of adaptation activities which were designed to make interventions 'culturally appropriate'. Here I was following the approach outlined by Weiss [137] to outline the dominant activities in the literature reported by program stakeholders to assist in gaining insights into the range of potential candidate theories as a step in the process of developing more detailed program theories. The sources were mostly specific to the HIV/AIDS field but I also included more general sources from the health promotion literature and this process led to my initial hypothesised 'chain' of adaptation activities in HIV/AIDS interventions at group and community levels. [137] These activities will be described in greater detail in the findings in Chapter 7 (7.1 and 7.2) but the broad adaptation activities in interventions which were implemented to make them more 'culturally appropriate' were in terms of 'staffing', 'language', 'content', 'ethnic diversity', 'settings', 'community consultation' and 'priority setting'. These were the basis for the development of more detailed program theories detailed in the next section below.

6.2 Developing more detailed program theories

I then focused on generating more detailed mechanisms underlying the broad adaptation activities I had uncovered in the literature to gain deeper insights into 'how' and 'why' HIV prevention interventions with immigrants are assumed to work. Here I was guided by the theory-based evaluation work of Weiss [137] who sees program theory as largely a series of steps that will keep participants responsive from initial contact with the intervention to intermediate outcomes and

impacts. Put another way program theory deals with "the mechanisms that intervene between the delivery of the program … and the occurrence of outcomes of interest. It focuses on participants' responses to [the] program." [136(p.73)] Returning again to the distinction between implementation

Fig. 1 The initial theorised implementation 'chains' in HIV prevention interventions with immigrants



Intervention adaptation activity	**Theorised mechanism of adaptation activity**	**Anticipated participant response to adaptation activity**	**Potential participant resistance to adaptation activity**
Staffing the intervention with people who are bicultural, matched to the target group – 'staffing'	*'Authenticity'* of intervention	Intervention is 'for them' as the staff are 'like them'	'Tokenism' of staffing
Using immigrant community languages, matched to the target group – 'language'	*'Understanding'* of intervention	Understand intervention messages	'Patronising' in use of community languages
Adapting intervention content to suit the target population – 'content'	*'Consonance'* of intervention with existing cultural values	Intervention has recognisable elements of their own culture	'Dissonance', especially if participants are highly acculturated in the destination country or where culture is a source of oppression
Using ethnicity to target intervention – 'ethnic diversity'	*'Specificity'* of intervention with ethnicity of target group	Intervention is specific to the ethnicity of the target group	'Stereotyping' in use of ethnicity as primary element of participant identity
Delivering intervention through immigrant community settings/structures – 'settings'	*'Embeddedness '* of intervention within immigrant communities	Intervention is encountered in familiar and local settings	'Marginalising' when participants see themselves as part of the 'mainstream' society
Build coalition with immigrant community institutions – 'community consultation'	*'Endorsement'* of intervention by community leaders	Intervention is 'allowed' and supported by immigrant community structures	'Rejection' of immigrant community leaders/sentinels in a new 'free' society
Evaluating intervention against immigrant community expectations – 'priority setting'	*'Framing'* of intervention outcomes with immigrant participants	Intervention matches immigrant participants' expectations for effectiveness	'Similarity' of expectations around effectiveness between immigrants and interventionists

theory and program theory made earlier we see that "the mechanism of change is not the program activities per se but the response that the activities generate". [136(p.73)] Pawson [15] highlights that the responses of program participants can involve them embracing the program or resisting the program which can assist in developing insights into what 'went wrong' (p. 25). While the

development of detailed program theories is just one step of a realist review, Pawson [135] points to its utility in that "it lays bare for managers and policy makers the multitude of decision points in an intervention and the thinking that has gone into them". [135(p.19)] In this way the different 'bits' of interventions can be interrogated and analysed to give insights into the program theories operating in the intervention.

I revisited the hypothesised initial adaptation activities in interventions – 'staffing', 'language', 'content', 'ethnic diversity', 'settings', 'community consultation' and 'priority setting' – that I had found in the literature and listed the responses these activities were expected to generate among the intervention participants. [136] I used the 20 'known set' interventions (APPENDIX A) along with other papers which were specific to HIV/AIDS prevention with immigrants to check firstly whether each hypothesised adaptation activity was reported in these interventions and, secondly if reported, to list the responses, including resistances, of intervention participants to these adaptation activities. I then interpreted the potential mechanisms operating between the activities and the responses of intervention participants. These activities, responses and theorised mechanisms which will be described more fully in the findings section in Chapter 7 (7.1 and 7.2) are summarised in Fig. 1. The seven theorised mechanisms – *'authenticity', 'understanding'*, *'consonance'*, *'specificity'*, *'embeddedness'*, *'endorsement'* and *'framing'* – were 'the lens' [15] to analyse the evidence from intervention and views studies to support or refute each theorised mechanism in HIV/AIDS prevention interventions with immigrants.

6.3 Outcomes of search strategies

The search strategies described in detail in the previous chapter (5.1) were designed to uncover evidence to test the program theories or mechanisms underlying HIV prevention interventions among immigrants in high-income countries through an analysis of the evidence from intervention studies and studies of the views of immigrants themselves. I will now detail the outcomes of the search strategies, the appraisal of the records found for relevance and rigour, the collation of the final set of intervention and views studies and the process used to annotate this final set of intervention and views studies into a format that facilitated extracting the data for further analysis and synthesis.

6.3.1 Intervention studies

The search records for intervention studies, summarised in Table 1, yielded 3,323 records, which were culled to 1,061 records after reviewing the title. This culling process was carried out for four of the searches (CINAHL, PsychInfo, PubMed and Sociological Abstracts/Social Services Abstracts/ERIC/PAIS). The criteria for culling the titles of intervention studies were that the studies were available in English, were about HIV/AIDS and were concerned with immigrants or ethnic minorities. If I was in doubt about the relevance of a title at this first stage of the culling process then I retained it for later appraisal at the abstract reviewing stage.

Table 1 Summary of searches and cull of intervention studies

Database	Search result records	No. of records after reviewing title	Amalgamation of records and removal of duplicates	No. of records after reviewing abstracts	Amalgamation of records and removal of duplicates	Hand searching and other strategies	No. of records where full reports were reviewed
PubMed	1,037	452	^452	83	+40	12 from views searches 1 from Expert Reference Group	
Sociological Abstracts/ Social Services Abstracts/ ERIC/PAIS	450	199	^^32	#24	19		
PsychInfo	289	169	^^^221	99	92		
CINAHL	547	73					
Google Scholar*	4,860 (of which only the first 1,000 could be reviewed by title)	168	^^^143	14			
Totals	3,323	1,061	848	220	151	13	164

*the search on Google Scholar did not differentiate between views or intervention studies.
^ PubMed records were reviewed by title but it was not practical to check for duplicates as they were not in an Endnote format.
^^Sociological Abstracts/Social Services Abstracts/ERIC/PAIS records which were not in an Endnote format were only retained after it had been determined that they were unique records/studies compared to amalgamated records for CINAHL/PsychInfo.
^^^For CINAHL, PsychInfo and Google Scholar duplicates were able to be removed electronically as these searches were able to be exported in an EndNote format.
Sociological Abstracts/ Social Services Abstracts/ERIC/PAIS search records did not have abstracts for immediate review. Therefore the records were only retained at this stage after it had been determined that they were unique records/studies compared to all PubMed abstracts that had been reviewed.
+ At this stage PubMed records were compared for duplication to PsychInfo/CINAHL/Google Scholar records.

I needed to follow a different approach for the title culling process in Google Scholar. The Google Scholar search was a single search for views and interventions and the title review process was in-built to the online search. Only those titles which were deemed relevant using the criteria for intervention studies described above (studies were available in English, were about HIV/AIDS and were concerned with immigrants or ethnic minorities). The same criteria were used for views studies. Again, if I was in doubt about the relevance of a title at this first stage of the culling process then I retained it for later appraisal by reviewing the abstract.

Table 2 Summary of searches for views studies

Database	Search Result Records	No. of records after reviewing title	Amalgamation of records and removal of duplicates	No. of records after reviewing abstracts	Amalgamation of records, removal of duplicates, and assessment of study design	Hand searching and other strategies	No. of records where full reports were reviewed
PubMed	770	385	^385	131	+15	1 from intervention searches 5 from Expert Reference Group	
Sociological Abstracts/ Social Services Abstracts/ ERIC/PAIS	339	92	^^57	#51	32		
PsychInfo	606	180	^^^ 253	142	57		
CINAHL	334	88					
Google Scholar*	4,860 (of which only the first 1,000 could be reviewed by title)	123	^^^49	40			
Totals	2,715	868	744	364	104	6	110

*The search on Google Scholar did not differentiate between views or intervention studies.

^ PubMed records were reviewed by title but it was not practical to check for duplicates as they were not in an Endnote format.

^^Sociological Abstracts/Social Services Abstracts/ERIC/PAIS records which were not in an EndNote format were only retained after it had been determined that they were unique records/studies compared to amalgamated records for CINAHL/PsychInfo

^^^For CINAHL, PsychInfo and Google Scholar duplicates were able to be removed electronically as these searches were able to be exported in an EndNote format.

Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records did not have abstracts for immediate review. Therefore the records were only retained at this stage after it had been determined that they were unique records/studies compared to all PubMed abstracts that had been reviewed.

+ At this stage PubMed records were compared for duplication to PsychInfo/CINAHL/Google Scholar records.

Following the initial culling by title I amalgamated the three search records that were in Endnote format (CINAHL, PsychInfo and Google Scholar) which removed 46 duplicates. I then manually reviewed the Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records against this amalgamated Endnote list and only retained unique titles which resulted in 167 duplicates being removed. It was not feasible to remove duplicates from the PubMed search at this stage as there were 452 records to review and they were sorted by publication year rather than the alphabetical sorting in the amalgamated Endnote file and the Sociological Abstracts/Social Services Abstracts/ERIC/PAIS file. I therefore had 848 records of abstracts of intervention studies which were appraised for relevance against more detailed criteria described below.

6.3.2 Views studies

The search records for views studies, summarised in Table 2, yielded 2,715 records, which were culled to 868 records after reviewing the title. This culling process was carried out for four of the searches (CINAHL, PsychInfo, PubMed and Sociological Abstracts/Social Services Abstracts/ERIC/PAIS). The criteria for culling the titles of views studies were that the studies were available in English, were about HIV/AIDS and were concerned with immigrants or ethnic minorities. If I was in doubt about the relevance of a title at this first stage of the culling process then I retained it for later appraisal at the abstract reviewing stage. The culling for views studies in the Google Scholar search was carried out online and was against the same criteria as for intervention studies described above.

Following this initial culling by title I amalgamated the three search records that were in EndNote format (CINAHL, PsychInfo and Google Scholar) which removed 89 duplicates. I then manually reviewed the Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records against this amalgamated EndNote list and only retained unique titles which resulted in 35 duplicates being removed. It was not feasible to remove duplicates from the PubMed search at this stage as there were 385 records to review and they were sorted by publication year rather than the alphabetical sorting in the amalgamated EndNote file and the Sociological Abstracts/Social Services Abstracts/ERIC/PAIS file. I therefore had 744 records of abstracts of views studies which were appraised for relevance against more detailed criteria described below.

6.4 Appraising the relevance of the evidence

Appraising studies for relevance in a realist review can be less predetermined at the outset [15 135] when compared to a 'traditional' systematic review. Pawson [15] asserts that as the prime focus of a realist review is to explore underlying theories of programs (rather than the programs themselves), a wider range of primary studies from other fields may be relevant to the analysis and synthesis (p. 86). Pawson [15] also contends that searching can reach a 'saturation point' and consequently impact on relevance "as sufficient evidence has been assembled to satisfy the theoretical need or to answer the question" (p. 86). In a 'traditional' systematic review inclusion and exclusion criteria – which may include study design – are often predetermined at the outset of the review in order to generate "an answerable [research] question". [121(p.17)] As Pawson [15] had provided little precise guidance on how to appraise studies for relevance I chose to follow a middle ground between the realist approach and the more 'traditional' approach and generated inclusion and exclusion criteria by reviewing the criteria used in similar systematic reviews [17 107 112 113] and refining them in light of the seven theorised mechanisms I had developed and summarised earlier (Fig. 1).

6.4.1 Appraising the relevance of intervention studies

The detailed criteria I derived from this analysis were to include intervention studies if the abstract indicated that the intervention:

- focused on HIV/AIDS
- focused on immigrants from developing or middle-income countries [164]
- was carried out in high-income countries [164]
- was available for review in English
- was implemented at a group or community level [14 100]
- and more than 65% of intervention participants were reported to be (or could be inferred to be) immigrants from developing or middle-income countries [164]

The abstracts of the PubMed search records were reviewed first and 83 of the 452 records were retained. The abstracts of the 32 Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records were not available for immediate review so they were compared to PubMed records and only retained if they were unique against the PubMed records. This removed eight duplicates. Finally the 364 abstracts of the CINAHL, PsychInfo and Google Scholar search

records were reviewed and 113 of them were retained. As with the culling by title process, if I could not assess the abstract against all of the exclusion criteria at this second stage of the culling process then I retained it for later appraisal of its relevance by reviewing the full report.

A further amalgamation of records was carried out between the PubMed records and the CINAHL, PsychInfo and Google Scholar EndNote records which removed 43 duplicates. All the retained search records were then re-examined and a further 26 duplicates were found. At this stage I had 151 records of intervention studies (Table 1). Hand searching and referrals of possible interventions from the searches of views studies yielded 12 additional records.

At a later stage in this research project, the Expert Reference Group provided feedback on my draft shortlist of intervention studies. The titles of the interventions they suggested were appraised for relevance of title and abstract as described above. This resulted in one full report of an intervention study being added to my draft shortlist of interventions. I therefore had 164 records of intervention studies for the appraisal of the full reports and papers.

6.4.2 Appraising the relevance of views studies

I followed a similar process to determine the criteria for the review of the abstracts of the views studies. The detailed criteria I derived from the review of similar systematic reviews in this area [17 112 113] were to include views studies if the abstract:

- focused on HIV/AIDS
- focused on immigrants from developing or middle-income countries [164]
- was carried out in high-income countries [164]
- was available for review in English
- focused on the views of immigrants – "as to what helps or hinders them in relation to … [HIV/AIDS] and about their perceptions of HIV-related … health" [107(p.19)]
- and more than 65% of the study participants were immigrants (or could be inferred to be) from developing or middle-income countries [164]

The abstracts of the PubMed search records were reviewed first and 131 of the 385 records were retained. The abstracts of 57 Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records were not available for immediate review so they were compared to PubMed records and only retained if they were unique against the PubMed records. This removed six duplicates.

Finally the 302 abstracts of the CINAHL, PsychInfo and Google Scholar search records were reviewed and 182 of them were retained. As with the culling by title process, if I could not assess the abstract against all of the exclusion criteria at this second stage of the culling process then I retained it for later appraisal of its relevance by reviewing the full report.

Initially I had envisaged that the criteria outlined above would generate a manageable number of views studies for reviewing full reports for inclusion in the review. However, I found that I had 364 studies retained after reviewing the abstracts against the criteria outlined above. It was not feasible to review this number of full reports so I made a pragmatic decision to add two additional criteria which was to retain views studies abstracts if :

- qualitative research methods were used including studies where this was in conjunction with, or preceded by, quantitative research methods
- qualitative studies had successfully recruited more than 15 immigrant participants

This was consistent with my other inclusion criteria around views studies but was a narrowing to focus on those views studies that might generate the soundest evidence of the perspectives of immigrants themselves on HIV prevention. The decision to exclude qualitative studies with less than 15 participants was part of the pragmatic decision to cull the large number of abstracts to a feasible number. This second review of abstracts was carried out in conjunction with a further amalgamation of records. Firstly, this was carried out between the PubMed records and the CINAHL, PsychInfo and Google Scholar Endnote records to remove records which did not include a qualitative methodology and/or which were duplicates and 241 records were removed. Secondly, Sociological Abstracts/Social Services Abstracts/ERIC/PAIS search records were re-examined and those which did not include a qualitative methodology – 19 records in all – were removed. At this stage I had retained 104 records of views studies (Table 2). Hand searching and referrals of possible views studies from the searches of interventions yielded one additional record.

At a later stage in this research project, the Expert Reference Group provided feedback on my draft shortlist of views studies. The titles of the views studies they suggested were appraised for relevance of title and the abstract as described above. This resulted in five full reports being added to my draft shortlist of views studies. I therefore had 110 records of views studies for the appraisal of the full reports and papers.

6.5 Appraising the rigour of the evidence

Quality appraisal of primary studies is a crucial step in any review of evidence. In a 'traditional' review it can be in-built to the exclusion criteria in the form of study design or the quality of studies can be analysed through the use of standardised checklists. [121] These checklists are often derived from experimental methods and often critically appraise primary studies for various forms of bias and errors in statistical analysis. [121] Unsurprisingly, these kinds of checklists are inappropriate in a realist review that is centrally concerned with the processes and mechanisms of interventions. [15] Instead Pawson [15] argues that "the appraisal criteria should be subordinate to the usage to which the primary study is put" (p. 87). Single studies should not necessarily fail on a single or multiple 'quality' criteria when "a realist review may choose to consider only one element of a primary study in order to test a very specific hypothesis about the link between context, mechanism and outcome". [135(p.22)] In this way it is conceivable that fragments of a range of primary studies that would fail a narrow quality criteria checklist may nonetheless have something useful to contribute to the theories or mechanisms being explored in a realist review.

6.5.1 Appraising the rigour of the evidence – intervention studies

Consequently, in appraising the rigour of intervention studies in this realist review, I was guided by one principle – did the inferences drawn by the original researcher have sufficient weight to make a methodologically and conceptually sound contribution to the test of theories in the review. [135(p.22)] For the intervention studies this principle translated primarily into a check when reviewing full reports, borrowed from a quality appraisal framework developed by the EPPI-Centre, [121(p.52)] around whether the study described some of the key processes involved in delivering the intervention that related to the initial theorised mechanisms summarised earlier (Fig. 1). This could either be confirmatory or contradictory evidence. [135] I appraised the full reports of 164 intervention studies (two of which were unable to be found) for relevance and rigour and this resulted in 34 studies being included in the detailed analysis and synthesis (APPENDIX E). At the abstract culling stage I had retained any abstracts where I could not accurately assess the study against each of my exclusion criteria for relevance. Consequently, most of the 130 studies which were excluded at this stage of reviewing full reports failed to meet the relevance criteria described earlier. For example, on reading a full report it became apparent that the intervention was in fact an individual-level intervention rather than the group-level intervention that was hinted at in the abstract. Those reports that were excluded for rigour alone

typically did not provide sufficient description of the implementation of the intervention to be of use in this realist review of evidence.

6.5.2 Appraising the rigour of the evidence – views studies

In appraising the rigour of primary views studies in this realist review I was guided by the same general principle – did the inferences drawn by the original researcher have sufficient weight to make a methodologically and conceptually sound contribution to the test of theories in the review. [135(p.22)] For the views studies this principle translated into a series of checks adapted from a quality assessment framework used by the EPPI-Centre to assess the quality of the reporting and appropriateness of methods used in views studies. [107(pp.22-23)] The checks I employed when reading full reports of views studies were thus around the adequacy of the reporting of the study in terms of :

- the aims and objectives
- the context in which the study was undertaken
- the methods used to collect and analyse the data
- a description of the sensitivity and appropriateness of the data collection methods to allow immigrants to express their views and data analysis methods to capture those views
- a description of the involvement of immigrants in conducting the study. [107(pp.22-23)]

I appraised the full reports of 110 views studies (one of which was unable to be found) for relevance and rigour and this resulted in 40 studies being included in the detailed analysis and synthesis (APPENDIX F). At the abstract culling stage I had retained any abstracts where I could not accurately assess the study against each of my exclusion criteria for relevance. Consequently, most of the 71 studies which were excluded at this stage of reviewing full reports failed to meet the relevance criteria described earlier. For example, on reading a full report it became apparent that less than 65% of study participants were immigrants where the abstract had been ambiguous about the demographics of the participants. Of the 71 full reports excluded at this stage, seven studies were excluded because they had less than 15 participants. Those reports that were excluded solely on the basis of rigour did not meet the quality assessment checks described above to be retained in this realist review of evidence.

6.6 Collation of studies included in the analysis and synthesis

The next step in the analysis was to collate the studies which were included in the review into two templates so that evidence could begin to be extracted for the synthesis. [15]

6.6.1 Intervention studies

I developed a table adapted from Darbes et al [113] which summarised key elements of HIV/AIDS interventions with immigrants that had been retained for detailed analysis. I took each full report of a study and reviewed it to collate the key elements of the intervention into this descriptive table which is presented in full at APPENDIX G with an excerpt of the first entry presented in Table 3. This table includes the adaptation of intervention activities in each study to enhance cultural appropriateness. Of the studies retained for analysis in the review the majority were conducted in the USA, with three studies in Israel and the Netherlands, and one each in Switzerland, Australia, Canada and New Zealand. In some cases the studies reported on different aspects of an intervention or were a later follow-up evaluation of an earlier intervention. In all, the 34 reports (APPENDIX E) as far as can be ascertained reported on 30 distinct interventions with the interventions almost equally divided between group-level and community-level interventions [14] with a mix of interventions targeted to the 'general' immigrant community or specific sub-groups such as gay men or women. Almost all intervention studies were primary HIV prevention interventions with only two interventions targeting HIV-positive immigrants.

6.6.2 Views studies

I developed a similar descriptive table adapted from the work of Darbes et al [113] and Rees et al [107] which summarised key elements of HIV/AIDS views studies among immigrants that had been retained for detailed analysis. I took each full report of a study and reviewed it to collate the key elements of the views study into the descriptive table which is presented in full at APPENDIX H with an excerpt of one entry presented in Table 4. Of the views studies retained for analysis in the review the majority were conducted in the USA, but there was a wider span of countries than for the intervention studies with eight studies carried out in the UK, seven studies in Australia, and one each in Sweden, Canada and Japan. There was a mix of views studies in that about half of the studies reported on the views of HIV-positive immigrants, and a mix in terms of gender and sexual orientation. In all the 40 views studies (APPENDIX F) as far as can be ascertained reported on 28 distinct research projects.

Table 3 Excerpt of a collation of an intervention study included in the review

First Author	Location	Intervention	Intervention participants	Intervention theory or model	Adaptation of intervention activities to increase cultural appropriateness	Key results	Key limitations
Amaro (2002)	Boston, USA	Comparison of two interventions for immigrant women: 1. HIV-specific with participatory education; 2. women's health specific and didactic Each interventions 12 group sessions and 16 hours of content – with a focus on sexual risk reduction	170 Latina women Dominican 55%, Puerto Rican 13% % of immigrants not stated but inferred to be > 65% due to participant recruitment methods	Intervention ;1 – Social Cognitive Theory (SCT) Empowerment Theory Intervention 2; SCT Theory of Reasoned Action (TRA) Health Belief Model (HBM)	Language (Spanish) Bicultural Community Educators (BCEs) – to facilitate groups Gender – of group facilitator Content – use cultural elements in curriculum	Diminishing effects of intervention at 15 months when compared to effects measured by Raj et al at 3-months (2001) High satisfaction of program participants	Study design Difficulty of recruiting and retaining participants in a multi-session program Did not focus on male partners of participants

Table 4 Excerpt of a collation of a views study included in the review

First Author	Location	Study aims	Study participants	Study design – sampling and data collection methods	Study design – data analysis methods	Sensitivity and appropriateness of study methods to allow participants to express their views	Notes
Anderson (2004)	London, UK	Explore the lived experiences of immigrant women with HIV	62 African-born women 100% immigrants	Purposive sample Brief quantitative survey followed by 1-1 in-depth interviews	Thematic analysis	Female interviewers Interviews in French or English Survey administered orally if required	Related to Doyal (2003), Doyal (2005), Doyal (2006)

6.7 Annotation of intervention and views studies included in the analysis and synthesis

The next step in the analysis was to annotate the studies which were included in the review into two templates so that results from each report could be extracted for analysis and synthesis. [15] I reviewed each report against the seven theorised adaptive mechanisms (Fig. 1) which I had developed through the program theory mapping process [136 137] and rated each report against these theorised mechanisms. In this way I was beginning to populate the evaluative framework which I had developed (Fig. 1) with evidence from each of the studies found in the searches. [135] For each mechanism I rated each report as having sound (+++), moderate (++), partial (+) or no evidence (X) to support each theorised adaptive mechanism (Fig. 1). A sound rating (+++) implied that the report had strong evidence of the centrality of this mechanism in the design and implementation of the intervention. A moderate rating (++) implied that the report had less compelling evidence of this adaptive mechanism in the design and implementation of the intervention. A partial rating (+) implied that the report had only minimal evidence of this adaptive mechanism in the design and implementation of the intervention. Usually, the descriptions of interventions were explicit enough to assess that the mechanism had been part of the intervention but in some cases the evidence needed to be inferred from the evidence of the full reports. No evidence (X) was when the adaptive mechanism was not mentioned in the report nor could it be inferred. I then carried out this rating process for each of the intervention studies. I did this by listing the seven adaptive mechanisms in a journal and read each study making notes as I read against each mechanism. Once I had completed this for all intervention studies I went back over my notes and tentatively rated each mechanism in each study. When I had completed this for all studies I then reviewed and revised my tentative rating to a final rating. The rating for views studies followed the same process of reading, note taking, tentative rating and revision to reach a final rating. A summary of the outcomes of this annotation process for intervention studies is at APPENDIX I and for views studies at APPENDIX J. In the interests of clarity and transparency of the analysis I will now give an example of the rating process for two studies – one intervention study and one views study.

6.7.1 Annotation of an intervention study

The intervention study reported by Carballo-Dieguez and others [165] was analysed and rated against each of the seven adaptive mechanisms (APPENDIX I). This study reports on a

randomised-control trial of an HIV prevention intervention developed within a conceptual framework of empowerment theory which was implemented with 180 Latino gay and bisexual men in New York City. [165] Key eligibility criteria were being Latino (defined as up to third generation of Latin American descent), being gay or bisexual (defined as more than ten sexual experiences with other men over their lifetime) and those who reported at baseline at least one instance of unprotected anal intercourse in the previous two months. [165] The intervention primarily involved designing and delivering a series of eight workshops with follow-up assessment interviews at two, six and twelve months. [165] I rated the evidence for the '*authenticity*' mechanism in this intervention as sound (+++) as the intervention content was developed by a team of Latino gay men, while the recruitment, baseline assessments and follow-up assessments were also carried out by Latino gay men and the workshop facilitator was a Latino gay man. [165] Similarly I rated the evidence for the '*understanding*' mechanism in this intervention as sound (+++) as the intervention content was developed in Spanish and English, promotional materials used in recruitment were also bilingual, baseline and follow-up assessment interviews could be done in Spanish or English, and all but two intervention workshops were reported to be carried out entirely in Spanish by a bilingual facilitator. [165] The evidence for the '*consonance*' mechanism in this intervention was also rated as sound (+++) as the content was developed specifically for this population by public health researchers and practitioners who were from the target group and who embedded aspects of Spanish culture – for example *dichos* (Spanish proverbs) – into exercises and activities in the intervention content. [165] The evidence for '*specificity*' mechanism was rated as moderate (++). While there was no explicit reporting of the use of ethnicity to target the intervention – instead the term Latino was used throughout – I inferred that the intervention team would have been from diverse Latino ethnicities and that their shared understanding of Spanish language and Latino cultural norms would have facilitated a sensitivity to important differences among the diverse ethnicities of the Latino gay male participants. [165] The evidence for the '*embeddedness*' mechanism in this intervention was also rated as moderate (++) as the intervention recruitment was carried out via outreach to community settings such as beaches, bars, and organisations which were familiar to participants and assessment interviews were offered at the offices of the Hispanic AIDS Forum, a community-based organisation. [165] The evidence for the '*endorsement*' mechanism in this intervention was rated as sound (+++) as the intervention was developed in a formal partnership with the Hispanic AIDS Forum, the intervention content was focus-tested, and the intervention was also implicitly endorsed through the design and development team being members of the target group. [165] The

evidence for the '*framing*' mechanism in this intervention was rated as partial (+). While the assessment instruments had been pre-tested with Spanish and English versions, there was little or no evidence of involving Latino gay male participants to frame the intervention in terms of priority setting and the study results highlighted the limitations of a prior assumption that participants would be disempowered when the study results pointed towards their resilience as gay immigrants living in a high-income country. [165]

6.7.2 Annotation of a views study

Similarly the study reported by Anderson and Doyal [166] was analysed and rated against each of the seven adaptive mechanisms (APPENDIX J). Here the task of rating each study was more difficult as the views studies included in the review rarely addressed specific questions of how to prevent HIV but rather answered questions that gave insights into the context in which HIV prevention was experienced by immigrants themselves. This study explored the lives of 62 African-born women living with HIV in London through 1-1 in-depth interviews. [166] There was no evidence (X) from the study of the relevance of either '*authenticity*' or '*understanding*' as theorised adaptive mechanisms in HIV/AIDS interventions. Indeed the study pointed in the opposite direction with a strong preference for HIV/AIDS staff from the host population or other ethnicities and a preference for the use of second languages such as English and French rather than African community languages though these preferences may have been related to a desire for anonymity and confidentiality by the HIV-positive participants from people from their own ethno-linguistic community. [166] The evidence of the relevance of the '*consonance*' mechanism in this study was rated as sound (+++) as the study reported participants perceiving themselves to be at minimal or no risk of HIV prior to diagnosis, associating HIV with people who had multiple sexual partners or who were prostitutes, and expressed views of the need for profound secrecy around their HIV diagnosis due to the prevalence of HIV/AIDS-related stigma and discrimination in the African-born communities in the UK. [166] The evidence of the relevance of the '*specificity*' mechanism in this study was rated as partial (+) as the study reported participants viewing ethnicity as secondary to their common (often traumatic) experience of immigration and their low socioeconomic status in the UK. [166] The evidence supporting the relevance of the '*embeddedness*' mechanism in this study was rated as partial (+) as the study reported participants withdrawing from immigrant community structures and settings and avoiding social interactions with other Africans as a strategy to maintain secrecy around their HIV status [166] which in a sense was contradictory to the intention of the theorised mechanism. The evidence of the relevance of the

'*endorsement*' mechanism in this study was rated as moderate (++) as the study participants reported that their faith was a major source of support in coping with their HIV diagnosis, [166] and I inferred from this evidence that interventions among Africans in the UK could be enhanced through securing the endorsement of faith-based community leaders to combat widespread stigma and discrimination. Finally the evidence supporting the relevance of the '*framing*' mechanism in this study was rated as sound (+++) due to the vastly different social milieu reported by participants where their HIV-positive status was over-shadowed by immigration status concerns, the impact of past traumatic events which often preceded immigration, the safety of family members including children who were residing overseas (often in Africa), and their own experiences of HIV among close friends and family. [166] I inferred from this evidence that the immigrants in this study had a range of more pressing social concerns in their daily lives than HIV prevention and that the design and implementation of an intervention would need to be framed in line with this context.

In this chapter we can see that although the processes used to commence the analysis of the primary studies have been presented as a series of steps they were in many cases not rigidly delineated nor rigidly sequenced. For example, the appraisal for relevance occurred at the abstract reviewing stage and a second iteration occurred when I reviewed the full reports. Pawson [15 135] tells us to expect this more iterative process as part-and-parcel of a realist review. Similarly, as mentioned previously, in realist reviews of evidence analysis and synthesis tend to occur alongside each other. [15 135] I have presented the methods used to develop the initial and more detailed theorised mechanisms (Fig. 1) and for clarity presented a summary of the findings of these two steps of the analysis as the seven theorised mechanisms (Fig. 1) also influenced the appraisal of the relevance and rigour of studies found in searches. [15] I traced the process from the outcomes of the search strategies through to the appraisal of the studies found for relevance and rigour, a collation of the final set of intervention and views studies and the process used to annotate this final set of studies into a format that facilitated extracting the data for further analysis and synthesis.

Section Three FINDINGS

In this section the first chapter presents the findings of the prevailing program theories or mechanisms underlying HIV prevention interventions with immigrants. The second chapter – Chapter 8 – in this section presents the findings which tests these seven theorised mechanisms against the evidence from the primary data of intervention studies and views studies. Chapter 8 concludes with an overview of the revised and refined theorised mechanisms following the synthesis of the evidence from intervention and views studies.

Chapter 7 Prevailing program theories underlying HIV/AIDS prevention interventions with immigrants

7.1 Findings of initial program theories

A number of steps, which have been described in detail earlier (6.1 and 6.2), were carried out to develop the initial explanatory framework of HIV prevention interventions in the field in order to articulate the key theories to be explored in the review. [15] [134] [135] Essentially this was an assessment of key literature to uncover administrative thinking, policy history, legislative background, and key points of contention that lie behind the family of interventions [15] – in this case primary and secondary HIV prevention interventions at group and community levels with immigrants from developing and middle- income countries living in high-income countries.

As detailed earlier, this research frames interventions as a series of implementation 'chains', each made up of an adaptation activity which generates an anticipated response and a potential resistance to the intervention from immigrants (Fig. 2). [136] Intervening between the adaptation activity and anticipated response by immigrants are the theorised mechanisms – the 'change elements' or program theories – of the intervention (Fig. 2). [136] It is important to note that in reality these 'chains' can operate in non-linear and unpredictable ways. [134] [135] As discussed earlier, from a realist perspective interventions are made up of relationships between mechanisms, outcomes *and* the contexts in which they occur. [135(p.2)] The adaptation mechanism

may ‘misfire’ and elicit a resistance which goes against the intervention goals or the anticipated response may not occur in certain contexts. Here, for simplicity, the implementation ‘chain’ is presented in a linear ‘path’ with the participant response and participant resistance represented as outcomes which point in different directions. In reality, these two different outcomes can be alternate responses influenced by context to the program mechanism.

Fig. 2 An intervention implementation ‘chain’

I reviewed and analysed papers I was aware of from my professional background and other papers found in my initial background search of the literature and pilot searches on each of the databases looking for themes in relation to ‘how’ and ‘why’ HIV prevention interventions with immigrants were supposed to work and what limitations they had. A dominant theme was one where ‘cultural appropriateness’ or ‘cultural sensitivity’ was assumed as a key principle or a philosophical stance for interventions in this area but where these terms were rarely defined or discussed in detail. [12 159-163] Even though ‘culture’ is a broader term, the term as used in these interventions is usually a narrower term more or less synonymous with ethnicity. [161] Another dominant theme was a strong critique of the cognitive and behavioural individualistic approaches to HIV prevention, mainly for their failure to account fully for the social and cultural influences on behaviours among immigrants, as well as the structural and environmental constraints which might impede behaviour change. [6 12 104 167-172] As Chng notes: “Unsafe behaviours [among immigrants] are rarely the direct product of merely a deficit of knowledge, motivation or skills but instead have layered meanings within a given, complex … social-cultural context.” [168(p.25)] The individualistic approach to HIV prevention which fails to take this context into account results, in the eyes of some, in a reproduction of interventions that have been found to have had limited impact in the past. [167]

In response to this pervasive critique there is an abundance of techniques of adapting interventions to ‘suit’ the ‘culture’ of the target group in the literature, gathered by some in the literature under the banner of ‘cultural competence’. [163 173-178] Cultural competence is

conceptualised as more than awareness and sensitivity to the target populations' needs and includes behaviours, attitudes, skills and policies which are (ideally) embedded in systems, agencies, policies and practice across the health sector for the benefit of diverse populations. [173(p.182)] Cultural competence is a refutation of the 'one-size-fits-all' policies and practices, a refutation which Nemoto [169] sees as a "contemporary response to the history and on-going practice of culturally incompetent providers and researchers. [where] … each affected [immigrant or ethnic] community brings to this issue its own history of actual and perceived injury and negligence [by health agencies]" (p. 42). Thus cultural competence is a key conceptual framework for situating culturally appropriate interventions for immigrants. My next task was to review and analyse the papers in greater detail to explore the dominant activities to make interventions 'culturally appropriate' which might operate in the field of HIV/AIDS prevention with immigrants following the approach outlined by Weiss [137] (and described in more detail earlier) to describe the dominant activities reported by program stakeholders. This process led to my initial hypothesised 'chain' of adaptation activities in HIV/AIDS interventions at group and community levels with immigrants. [137]

Two key adaptation activities frequently cited in interventions in the literature were staffing the intervention with bicultural staff who were 'matched' to the target population, [12 17 104 161 162 173 174 177 179-181] along with responding to the linguistic needs of the target population. [12 112 160 172 173 177 180 181] A third adaptation activity related to adapting the intervention content to achieve congruence with the target audience in terms of values, norms, symbols or metaphors. [6 12 17 104 161 171-175 180 181] Planning and implementing the intervention to respond specifically to the ethnicity of the target population was a fourth adaptation activity in my review of the literature (e.g., targeting Mexican rather than Hispanic immigrants). [17 112 113 162 167 175] These two adaptation activities also involved balancing other cultural influences such as gender, sexual identity, age and socioeconomic backgrounds. [112 161 162 170 173 181-184] Delivering the intervention in settings and through structures familiar to immigrant populations such as places of worship, beauty salons, or immigrant mass media was a fifth adaptation activity. [104 160 171 172 175] Securing the endorsement of the target population through consultation processes and organisational partnerships was cited as another potential adaptation activity to achieve 'cultural appropriateness' in interventions with immigrants. [12 112 170 175 181 185] Another less cited adaptation activity was centred on the degree to which the goals of the intervention 'matched' immigrant community expectations in determining the overall goals for the intervention. [162 172 178 180 186] This adaptation activity could be carried out

through ensuring that the priority accorded to HIV prevention among the target population was taken into account in evaluating the intervention to ensure that the HIV intervention was congruent with the social and structural issues which might impact on the effectiveness of interventions. [178] [180] These broad adaptation activities in interventions in terms of 'staffing', 'language', 'content', 'ethnic diversity', 'settings', 'community consultation' and 'priority setting' were the first step in the development of more detailed program theories summarised below (Fig. 1).

The emphasis on adaptation activities was dominant in the literature I reviewed and much less attention was given to building interventions specifically for immigrants largely due to the multiplicity and diversity of ethnicities and cultural values that exist in the immigrant target populations residing in many high-income countries today. [181] I would also add the observation that many ethnic minority populations in high-income countries like Australia do not make up a sufficient critical mass of the overall population to warrant the resources such an exercise would take. Finally, there is some suggestion in the literature of the possibility of importing interventions from immigrant countries of birth to high-income countries though the merits of such an approach have been questioned for the potential challenges of how to adapt and deliver these interventions in vastly different contexts and take into account the transition of migration. [182] These different contexts include the differing population profiles of HIV/AIDS in high-income countries with immigrants often moving from countries with generalised heterosexual epidemics to countries like Australia where gay men are the most affected community and the often vastly different health and social systems between where the intervention was originally implemented in the country of origin and the destination high-income country. In addition, the often profound social disruption associated with migration – a life-changing event and process [70] – also points to a need for a careful assessment of using interventions from immigrant countries of birth without sufficient consideration of the adaptations that might be warranted to take into account the transitions associated with migration.

7.2 Findings of more detailed program theories

I now focused on generating more detailed mechanisms underlying the broad adaptation activities I had uncovered earlier from the literature to gain an insight into 'how' and 'why' HIV prevention interventions with immigrants are assumed to work. As described earlier (6.1 and 6.2), the process of generating the mechanisms was guided by the theory-based evaluation work

of Weiss [137] who sees program theory as largely a series of steps that will keep participants responsive from initial contact with the intervention to intermediate outcomes and impacts. In other words, the program theory deals with "the mechanisms that intervene between the delivery of the program … and the occurrence of outcomes of interest. It focuses on participants' responses to [the] program". [136(p.73)] Pawson [15] highlights that the responses of program participants can involve them embracing the program or resisting the program which can assist in developing insights into what 'went wrong' (p. 25).

I revisited the hypothesised initial adaptation activities in interventions – 'staffing', 'language', 'content', 'ethnic diversity', 'settings', 'community consultation' and 'priority setting' – that I had found earlier. As described in more detail earlier (6.1 and 6.2), I then tested these adaptation activities against the literature of the 20 known interventions (APPENDIX A) and other papers specific to HIV/AIDS, listing the participant responses to these activities and interpreting the potential mechanisms operating between the activities and the responses of intervention participants. [136] This iteratively developed seven hypothesised mechanisms. I will now turn to the findings of these activities, responses and theorised mechanisms in more detail.

The 'staffing' and 'language' adaptation activities found earlier were also widely reported in HIV/AIDS interventions for immigrants in high-income countries in the literature. [108-110 112 165 167 172 187-198] The responses of intervention participants to the 'matching' of 'staffing' was reported to be that the intervention was 'for them' – as the staff delivering the intervention were 'like them'. [108-110 112 165 167 172 187-198] This led me to theorise that the underlying mechanism involved in 'staffing' was around the '*authenticity*' of the intervention (Fig. 1). The responses of intervention participants to the 'matching' of 'language' was reported to be that, as the intervention was in their first language, it was possible for them to understand the intervention. [108-110 112 165 167 172 187-198] This led me to theorise that the underlying mechanism involved in 'language' was 'understanding' of the intervention (Fig. 1). Using an example of an intervention with Latino immigrants in the USA, '*authenticity*' and '*understanding*' mechanisms were hypothesised to be operating when, for example, Latino facilitators delivered a series of HIV education sessions to groups of Latino immigrants in Spanish.

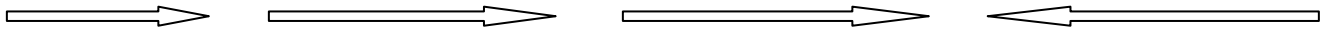
The 'content' and 'ethnic diversity' adaptation activities found earlier were also reported in HIV/AIDS interventions for immigrants in high-income countries. [108 110 112 165 167 172 187 189 192 193]

[195 196 198] Intervention participants were reported to respond positively to the 'matching' of the intervention 'content' as it was congruent with elements of their own culture. [108 110 165 167 172 187 192 193 195 196 198 199] This led me to theorise that the underlying mechanism involved in 'content' was around the '*consonance*' of the intervention (Fig. 1). The targeting of interventions in terms of 'ethnic diversity' essentially invoked responses among participants where they reported the intervention was specific to their ethnicity. [108 167 189 192 196 198] This led me to theorise that the underlying mechanism involved in 'ethnic diversity' hinged on '*specificity*' of the intervention (Fig. 1). Sticking with our example of an intervention with Latino immigrants '*consonance*' was hypothesised to be operating when Latino cultural norms such as *machismo* or Latino proverbs were drawn on for the intervention content. '*Specificity*' was hypothesised to be operating when Mexican, rather than Latinos more broadly, were specifically targeted by the intervention.

The 'settings', 'community consultation' and 'priority setting' adaptation activities found earlier were also reported in HIV/AIDS interventions for immigrants in high-income countries though somewhat less commonly than the other adaptation activities. [108 110 165 167 172 187 189 191 192 198 200-202] Intervention participants were reported to respond positively to engaging with interventions in familiar 'settings' or through structures such as immigrant community media. [108 110 167 172 187 189 191 192] This led me to theorise that the underlying mechanism involved in 'settings' activities hinged on the '*embeddedness*' of the intervention (Fig. 1). 'Community consultation' activities were reported to result in greater support from immigrants for intervention strategies [108 165 172 198 200-202] which led me to theorise that the underlying mechanism involved in 'community consultation' was one of '*endorsement*' (Fig. 1). Finally, the 'priority setting' adaptation activity was reported to result in immigrant participants' expectations being strongly aligned with the intervention goals and intended outcomes [167 192] and could include ensuring that intervention outcomes and notions of effectiveness 'match' those of immigrant participants through participatory approaches to evaluation. [186] The underlying mechanism which I theorised was involved in 'priority setting' hinged on the '*framing*' of the intervention (Fig. 1). Keeping with our example of an intervention with Latinos in the USA, '*embeddedness*' is hypothesised to be operating in an intervention being delivered at farms where Mexican migrant day labourers work. The '*endorsement*' mechanism is hypothesised to be operating when an intervention consults extensively with Mexican immigrants or involves a Mexican community-based organisation in the intervention to garner their support for intervention strategies. Finally, the '*framing*' mechanism is hypothesised to be operating when an intervention for Mexican immigrants

engages with a Mexican community organisation in 'priority setting' around intervention outcomes and evaluation.

Fig. 1 The initial theorised implementation 'chains' in HIV prevention interventions with immigrants



Intervention adaptation activity	**Theorised mechanism of adaptation activity**	**Anticipated participant response to adaptation activity**	**Potential participant resistance to adaptation activity**
Staffing the intervention with people who are bicultural, matched to the target group – 'staffing'	*'Authenticity'* of intervention	Intervention is 'for them' as the staff are 'like them'	'Tokenism' of staffing
Using immigrant community languages, matched to the target group – 'language'	*'Understanding'* of intervention	Understand intervention messages	'Patronising' in use of community languages
Adapting intervention content to suit the target population – 'content'	*'Consonance'* of intervention with existing cultural values	Intervention has recognisable elements of their own culture	'Dissonance', especially if participants are highly acculturated in the destination country or where culture is a source of oppression
Using ethnicity to target intervention – 'ethnic diversity'	*'Specificity'* of intervention with ethnicity of target group	Intervention is specific to the ethnicity of the target group	'Stereotyping' in use of ethnicity as primary element of participant identity
Delivering intervention through immigrant community settings/structures – 'settings'	*'Embeddedness'* of intervention within immigrant communities	Intervention is encountered in familiar and local settings	'Marginalising' when participants see themselves as part of the 'mainstream' society
Build coalition with immigrant community institutions –'community consultation'	*'Endorsement'* of intervention by community leaders	Intervention is 'allowed' and supported by immigrant community structures	'Rejection' of immigrant community leaders/sentinels in a new 'free' society
Evaluating intervention against immigrant community expectations – 'priority setting'	*'Framing'* of intervention outcomes with immigrant participants	Intervention matches immigrant participants' expectations for effectiveness	'Similarity' of expectations around effectiveness between immigrants and interventionists

These seven mechanisms were theorised as the key, rather than the only, interrelated mechanisms contributing to cultural appropriateness in interventions with immigrants. These mechanisms also typically needed to be inferred from the literature as most studies and reports only formally stated

the significance of health promotion theories such as the Health Belief Model, Stages of Change Model or Social Cognitive Theory as the key theories operating in interventions with immigrants. Similarly, intervention outcomes were almost always explicitly reported against the theory or model (e.g., Social Cognitive Theory) adopted for the intervention (e.g., increased condom use).

The activities for adapting interventions can also be resisted by participants pointing to why things 'went wrong' (Fig. 1). At a staffing level intervention participants might not respond to 'matching' [203] staff along the lines of ethnicity and have a better response to experts. [179] Cultural community norms which are integrated into the content of an intervention may promote or impede HIV prevention efforts [183] and the strength of targeting a single ethnicity may serve to mask attention on more fundamental cultural elements for immigrants such as gender, sexuality, age and socioeconomic background. [168] An intervention may even be perceived to be subversive for being seen to use valued cultural norms to combat a stigmatised disease like HIV/AIDS or an intervention may be seen as too progressive by promoting the rights of women or gays – 'rocking the boat' of what for some is an idealised and static culture that must be handed down to future generations. [170] [183] An extension of this kind of resistance may be evident in immigrant community settings and institutions. Immigrant community institutions may be hostile to approaches from HIV agencies which attempt to build alliances or gain endorsement for interventions. [200] Immigrant religious institutions may be particularly unwilling to engage given what they may perceive as contradictions between their role as sources of compassion and guardians of morality. [202]

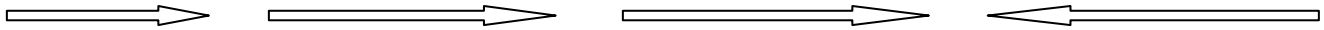
The review of this HIV/AIDS literature also pointed to higher-level structural interventions which I have not accounted for in this initial mapping of program theories. These include facilitating access to primary health care (e.g., for voluntary HIV testing) and to safe working and living environments (e.g., through ensuring that temporary working visas protect the immigrants' human rights). [160] [167] While these structural issues and other social determinants are likely to significantly impact on the HIV/AIDS interventions with immigrants they are less a part of the underlying mechanisms implicit in the research question but are more a part of the overarching context impacting on primary or secondary HIV/AIDS prevention intervention among immigrants in high-income countries.

In keeping with the spirit of a realist review the primary data of intervention and views studies which I had found using systematic search strategies was then used to test, revise and refine [15] the seven preliminary theories – '*authenticity*', '*understanding*', '*consonance*', '*specificity*', '*embeddedness*', '*endorsement*' and '*framing*' – I had theorised were operating in HIV/AIDS prevention interventions with immigrants in high-income countries (Fig. 1). "The initial program theory [or theories] provide[s] a 'lens' through which to view the studies, and one anticipates a spectrum of refractions." [15(p.74)] In realist reviews non-equivalence of interventions is the norm, thus "the only way to synthesise the evidence ... is to review the primary sources not study by study, but programme [sic] theory by programme [sic] theory". [135(p.33)] I will now assess in turn the evidence from intervention studies and views studies for each of the seven preliminary mechanisms theories.

Chapter 8 Synthesising the evidence from intervention and views studies

8.1 The evidence around '*authenticity*' mechanisms

Fig. 3 The initial theorised implementation 'chain' of '*authenticity*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Staffing the intervention with people who are bicultural, matched to the target group – 'staffing'	*'Authenticity'* of intervention	Intervention is 'for them' as the staff are 'like them'	'Tokenism' of staffing

8.1.1 Findings from intervention studies

The evidence from the intervention studies strongly supported the importance of this mechanism in HIV/AIDS prevention interventions with immigrants. Thirty-two interventions reported sound evidence (discussed earlier in 6.7 and summarised in APPENDIX I) for this adaptation mechanism suggesting the strong role of this theorised mechanism in contributing to program theory integrity in interventions with immigrants. This mechanism was found to be operationalised primarily through the use of people who are bicultural community educators – usually in terms of ethnicity or sometimes race – in the design and delivery of the intervention. [108 110 165 182 187 189-191 195 198 199 201 204-219] A further four interventions reported moderate evidence of this mechanism. [190 196 220 221] In several studies of interventions this mechanism was often further refined through the matching of intervention staff in terms of the gender and/or sexuality in addition to ethnicity. [110 165 189 190 195 204-209 211 215 216 218] No studies reported refining this mechanism through the employment of HIV-positive people as program implementers as a way to further refine the 'match' with participants who were HIV-positive though this is hardly surprising as there were only two secondary HIV prevention interventions included in the review. A final, though less common, way that this mechanism is reported to be operationalised is through the representation of participants in the imagery of the intervention. [206 208 220]

The theorised response of immigrants to this mechanism is that they perceive the intervention is 'for them' as the staff delivering it are 'like them'. However, in general intervention studies did not report on the feedback of program participants on this specific mechanism. There was positive feedback of '*authenticity*' mechanisms reported in two studies of a single intervention with Latina immigrant women in Los Angeles, USA, [209 216] in the evaluation of a national program to reach immigrants in Switzerland, [108] and in an intervention with Turkish and Moroccan immigrants in the Netherlands. [189] There were reports of general satisfaction or improved recruitment to intervention activities among program participants in four studies that employed this mechanism [110 207 210 214] though this was not attributed specifically to the use of bicultural community educators.

There were few reported resistances in intervention studies from program participants to this mechanism. Some resistance could be inferred from some studies such as the heterogeneity – in terms of ethnicity and countries of origin – which was reported as a barrier to program implementation in interventions with African immigrants in Canada and in the UK. [210 214] In terms of gender, one intervention using this mechanism was unable to recruit female Iraqi participants [190] and one group intervention reported that program participants felt the program could be improved by gender integration – male and female facilitators and participants – so as to enhance the communication of HIV/AIDS information across genders in the Latino community in the USA. [209 216] Two studies employing this mechanism reported a perception of limited appeal of the interventions to HIV-positive people [198 205] while another reported bicultural community educators being overwhelmed by the demand from socially isolated HIV-positive people on community educators who were untrained and unsupervised in providing psychosocial support. [108] Consequently the evidence is inconclusive as to whether the perceived lack of reach of programs to HIV-positive people was related to this mechanism or other program issues.

8.1.2 Findings from views studies

Sound or moderate evidence to support this mechanism was reported in five views studies (discussed in 6.7 and summarised in APPENDIX J) indicating that this mechanism was not widely regarded by immigrants themselves in terms of the cultural appropriateness of HIV/AIDS prevention interventions. [64 70 222-225] There was partial evidence reported in eight studies for matching program staff in terms of gender or sexuality as a strategy to achieve cultural appropriateness. [226-232] No views studies reported on the cultural appropriateness of employing

HIV-positive immigrants as a way to refine this matching mechanism in HIV/AIDS prevention. However, a study of HIV-positive African-born heterosexual men and women in the UK indicated a desire for peer support from other HIV-positive Africans [225] which tentatively points to the relevance of this mechanism in some contexts. There was moderate evidence in a single study for the importance of 'matching' the visual representation in imagery in interventions. [233]

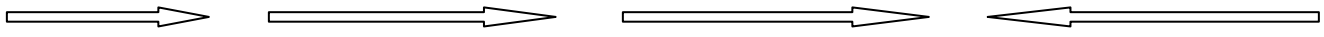
Twenty-six of the views studies did not report any evidence around the relevance and cultural appropriateness of '*authenticity*' mechanisms in HIV/AIDS prevention interventions (APPENDIX J). This may be due to the fact that the focus of the views studies was to explore the lived experiences of immigrants – both HIV-positive and HIV-negative – rather than explore appropriate mechanisms for HIV/AIDS prevention. Further, about half of the views studies included in the review were primarily made up of HIV-positive participants (APPENDIX J). These HIV-positive immigrants consistently expressed a strong desire for anonymity, secrecy and confidentiality around their HIV status when accessing health services and especially avoiding people from the same ethnicity (see, for example, the study by Dodds [234]). This suggests there may be a resistance to this mechanism on the part of HIV-positive immigrants who also generally rated the staff of HIV/AIDS services (who were never reported to be from the same ethnicity) and the care they received from these health services highly. [166 235-239] However, sound evidence for the importance of '*authenticity*' mechanisms – ethnically matching program staff with participants – was found in two studies of HIV-positive people: one of 'undocumented' immigrants in New York City [223] and another study which recruited immigrant participants from a support program for HIV-positive people in Sydney. [64] In each of these studies there were reports of the merits of staff from the same ethnicity. [64 223] There was some evidence of resistances to this mechanism in a study of Latino gay men in three cities in the USA [226] due to the fact that people from the same ethnicity might be a source of discrimination and prejudice against Latino HIV-positive people and/or Latino gay men. Other studies cautioned against the use of only women as bicultural health educators in the Latino community as it was perceived that they would not be effective in educating either young people or their husbands [240] while a study among Latino male farmworkers in the USA indicated the importance of male bicultural educators in the area of HIV/AIDS as it involves sensitive issues which cannot readily be discussed or explored with female staff. [228]

8.1.3 Summary

In summary, the strongest evidence to support this theorised mechanism came from the intervention studies included in the review. The evidence to support the relevance of this mechanism in contributing to cultural appropriateness was more muted in the views studies. This may be explained in part by the differences between the intervention studies which were mainly concerned with primary prevention of HIV – and consequently aiming to reach uninfected immigrants in the 'general' community or among sub-groups who were not HIV-positive – and the views studies – almost half of which were studies made up entirely of immigrants who were HIV-positive. In this sense the evidence from the intervention studies can be seen to 'speak to' primary HIV prevention whereas the evidence from the views studies can be inferred to be more relevant to secondary HIV prevention. Viewed in this way the evidence around '*authenticity*' mechanisms points towards its importance in primary HIV prevention with immigrants and away from its utility in secondary HIV prevention interventions. The main resistances to this mechanism came from views studies where immigrants questioned the utility of 'closeness' to intervention staff in terms of shared culture and there was a challenge to the operationalisation of this mechanism in contexts where the immigrant target groups were part of a larger multi-ethnic population. The evidence to support this mechanism from intervention and views studies was largely consistent with how '*authenticity*' had originally been theorised. However, the evidence deepened the insights into how '*authenticity*' is potentially enacted, and resisted, in real-world interventions.

8.2 The evidence around '*understanding*' mechanisms

Fig. 4 The initial theorised implementation 'chain' of '*understanding*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Using immigrant community languages, matched to the target group – 'language'	*'Understanding'* of intervention	Understand intervention messages	'Patronising' in use of community languages

8.2.1 Findings from intervention studies

The evidence from the intervention studies strongly supported the importance of this mechanism in HIV/AIDS prevention interventions with immigrants. Twenty-six interventions reported sound evidence (APPENDIX I) for this adaptation mechanism suggesting the strong role of this theorised mechanism in contributing to program theory integrity in interventions with immigrants. This mechanism was found to be operationalised primarily through the use of the literal first languages of immigrants themselves (where these differed from the predominant destination country language or languages) in the delivery and evaluation of interventions. [108 110 165 182 187 189-191 195 198 201 204-208 211 212 215 217-220 241] As most interventions included in the review were conducted in predominantly English-speaking countries the languages used in interventions tended to be languages other than English. A further seven interventions reported moderate evidence of this mechanism [190 199 209 210 216 221 242] primarily through less comprehensive use of the language spoken by participants (e.g., only in supporting health promotion resources). The operationalisation of this mechanism in interventions where there was only partial evidence for '*understanding*' mechanisms tended to be among immigrants who could be inferred to speak the language of the destination country as their lingua franca as in the case of interventions with sub-Saharan African immigrants in the UK [214] or young immigrants from the former Soviet Union and Ethiopia in Israel. [196]

The theorised response of immigrants to this mechanism is that they 'understand' the intervention and the information which is being conveyed in a literal sense. However, in general, intervention studies did not report the feedback on program participants on this specific mechanism. There was positive feedback of '*understanding*' mechanisms reported in two studies of a single intervention with Latina immigrant women in Los Angeles, USA [209 216] and in an intervention with Turkish and Moroccan immigrants in the Netherlands. [189] There were reports of general satisfaction or improved recruitment to, or demand for, intervention activities among program participants in five studies that employed this mechanism [108 110 207 211 220] though this could not be attributed specifically to the use of the first languages of immigrants. There were no reported resistances to this mechanism other than the issue of possible mistranslation of some items in a questionnaire evaluating an intervention with Vietnamese women in Los Angeles. [215]

8.2.2 Findings from views studies

Sound or moderate evidence to support this mechanism was reported in 17 views studies (APPENDIX J) indicating that the '*understanding*' mechanism was well regarded by immigrants themselves in terms of contributing to cultural appropriateness in HIV/AIDS prevention interventions. [64 70 222-224 228 230-232 235 239 243-248] There was partial evidence from a further eight studies for this mechanism largely inferred from the use of community languages in the research methods by the researchers themselves to successfully elicit the views of immigrants. [226 240 249-254] The strengths of '*understanding*' mechanisms from the perspectives of immigrants themselves were that communicating (reading, writing, listening or speaking) in your preferred first language in HIV/AIDS interventions lowered the threshold, and maximised participation and engagement, with intervention activities and in turn increased the opportunities to benefit from the intervention. The evidence to support this mechanism from the perspectives of immigrants themselves was stronger than for the '*authenticity*' mechanism indicating that what immigrants themselves most value is not 'closeness' in terms of shared culture but the rather more pragmatic shared language. [64 70 222-224 228 230-232 235 239 243 245-248 255] Support from, and access to, agencies where staff spoke their preferred language or provided written materials in their preferred language also assisted immigrants to navigate complex and often unfamiliar health systems. [64 70 222-224 228 230 231 235 243 245-248 255] For example, immigrant sex workers in San Francisco relied on bilingual outreach workers to engage with HIV/AIDS prevention interventions. [230] HIV/AIDS interventions using immigrants' preferred first language could also tap into higher order cultural values which are often reflected in the language. The cultural silences around HIV/AIDS observed in the Chilean and Turkish women in a study in Melbourne were reported to be mirrored in these participants' first languages – Spanish and Turkish. [245] Similarly, a study of the views of frontline Asian and Pacific Islander workers in the USA found that cultural taboos are often reflected in the language: "It [HIV/AIDS prevention work] seems harder [in the Cambodian language] because that language that we use … we don't speak about sex in that language and it just seems so forbidden to speak about sex in [the Cambodian language] to that person." [224(p.149)] So while the use of first languages is strongly supported by immigrants themselves it can present some additional challenges, and not just opportunities, in HIV/AIDS prevention work.

Fourteen of the views studies did not report any evidence around the cultural appropriateness of '*understanding*' mechanisms in HIV/AIDS prevention interventions (APPENDIX J). This may

have been due to these study participants not experiencing significant language barriers in the destination country. Indeed nine of these 14 studies were carried out in contexts where we can infer that most study participants spoke the dominant language of the destination country as their lingua franca: with seven studies carried out in the UK with sub-Saharan African participants, one study in New York City with Indian immigrants and one in Toronto with young Asian gay and lesbian participants (APPENDIX J). This points to the importance of this mechanism in HIV/AIDS prevention contexts where the immigrant populations are known to have poorer spoken or written skills in the dominant destination country language or languages. A minor resistance to this mechanism reported in some studies was in the use of interpreters or translators as a way to operationalise this mechanism. This was viewed as sub-optimal in that interpreters were not able to support or educate immigrants beyond language assistance, [222] [223] could be difficult to schedule, or be a different gender, [222] could amplify concerns around confidentiality, [64] or simply reinforced a reliance on a third party. As one HIV-positive immigrant in New York City put it: "Of course it's better seeing a Chinese doctor. You don't need a translator! You can just say whatever you want without having to go through another person." [222(p.18)] However, this preference for accessing co-linguistic health professionals could potentially lead to using health care workers who were less knowledgeable about HIV/AIDS. [28] Language barriers were, in some instances, associated with gender. [70] [248] For some HIV-positive women in Sydney, language barriers led to a reliance on their male partners who were proficient in English to access HIV testing for themselves. [70]

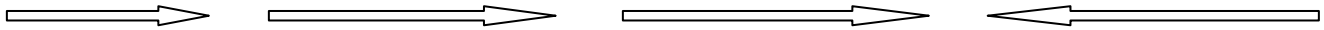
8.2.3 Summary

There was strong evidence to support this theorised mechanism across the intervention studies and the views studies indicating the pivotal role of this mechanism in primary and secondary interventions at group and community levels in contexts where there were language barriers for the immigrant population(s). This mechanism generally existed alongside the '*authenticity*' mechanism in group-level interventions. In practice, this meant that bicultural staff were also bilingual and used both language and cultural skills to plan and deliver the intervention. However, the evidence suggests that what was more valued by immigrants themselves was the opportunity to have a 'shared language' rather than simply the 'closeness' of 'shared culture' offered by bicultural staff. The evidence to support this shared language and '*understanding*' mechanism came mainly from the views studies where it was reported to be valued for the

potential it offers of not relying on others (e.g., interpreters) or co-linguistic social networks (e.g., family and friends) to access information about a sensitive topic such as HIV/AIDS or to navigate complex and unfamiliar health care systems. [64 70 222-224 228 230-232 235 239 243 245-248 255] HIV/AIDS interventions using immigrants' preferred first language could also tap into higher level cultural values which are often reflected in the language with some evidence in the mirroring of cultural silences and cultural taboos in the first language. [224 245] The evidence to support this mechanism from the intervention and views studies was largely consistent with how the '*understanding*' mechanism had originally been theorised. However, the evidence gave deeper insights into how '*understanding*' is enacted as a key mechanism to allow for a literal understanding by immigrants of HIV prevention interventions.

8.3 The evidence around '*consonance*' mechanisms

Fig. 5 The initial theorised implementation 'chain' of '*consonance*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Adapting intervention content to suit the target population – 'content'	*'Consonance'* of intervention with existing cultural values	Intervention has recognisable elements of their own culture	'Dissonance', especially if participants are highly acculturated in the destination country or where culture is a source of oppression

8.3.1 Findings from intervention studies

The evidence from the intervention studies strongly supported the importance of this mechanism – where the content of the intervention is 'consonant' with the existing values of immigrants – in HIV/AIDS prevention. Twenty-four interventions reported sound evidence (APPENDIX I) for this adaptation mechanism suggesting the strong role of this theorised mechanism in contributing to program theory integrity in interventions with immigrants. This mechanism was found to be operationalised primarily through drawing on research which pointed to dominant cultural values which were then incorporated into the intervention content. [108 110 182 187 195 201 204 206-209 211-218 221 241] This sometimes involved a nuanced interpretation of what the dominant immigrant cultural

values were – as these often clashed with the cultural norms of the destination country around gender and sexuality. In some interventions, such as those carried out with gay men, the dominant immigrant community values on homosexuality were juxtaposed with the dominant cultural values in the mainstream gay community in the high-income country leading to the development of content in interventions for Latino and Asian gay and bisexual men which addressed positive ethnic and sexual identities. [199] [206-208] Other interventions explored 'old-country' and 'new-country' norms in relation to HIV/AIDS as exampled in a program with newly arrived Ethiopian immigrants to Israel. [182] This mechanism also influenced the communication tools used in HIV/AIDS prevention. Proverbs were reported in an intervention with Latino gay men in New York City [165] and in an intervention with newly arrived Ethiopian immigrants is Israel. [205] Other communication tools, already well recognised within Latino immigrant communities, included using women as *promotoras* (outreach health educators), [209] [216] *fotonovelas* (low-literacy Latino comic books), *radionovelas* (Latino radio dramas), *lotteria* (Mexican tarot) cards, [206] [220] [221] and theatre [187] to enhance communication around HIV/AIDS. In two interventions with African-born immigrants in the UK, one used theatre and the other a soccer tournament to enhance communication around HIV/AIDS. [214] A further 14 interventions reported moderate evidence of this mechanism. [182] [187] [189-191] [195] [196] [198] [199] [209] [210] [216] [220] [242]

The theorised response of immigrants to this mechanism is that the intervention has recognisable elements of their own culture. However, in general the intervention studies did not report feedback of program participants on this specific mechanism. Some positive impacts of this mechanism could be inferred from a few interventions. One study reported favourable changes in beliefs about gender roles among Latina women [217] and another study reported greater connectedness to Latino gay community networks [208] though neither of these outcomes can be directly attributed to the incorporation of cultural values into the interventions. Two interventions with African-born immigrants in the UK reported positive feedback in the use of theatre and soccer as effective HIV/AIDS communication tools where there was a potential for a racist backlash from the mainstream community, some of whom associated HIV/AIDS with the inward migration of African-born refugees and asylum seekers. [214] There was little reported resistance to the incorporation of cultural values which is somewhat surprising given that cultural values have the potential to be protective and/or a driver of HIV/AIDS risks. Two studies of a single intervention pointed to the difficulty of using *promotoras* – a culturally recognised way in Latino communities of educating women to disseminate information on health matters into their families

and social networks. The studies reported resistance to using female *promotoras* in an HIV/AIDS context as it was felt that both men and women needed to respond to HIV/AIDS prevention messages and that young adults and men would not listen to HIV/AIDS prevention messages from their female partners and/or mothers. [209 216]

8.3.2 Findings from views studies

Sound or moderate evidence to support this mechanism was reported in 38 views studies (APPENDIX J) indicating that '*consonance*' mechanisms were seen as central and highly important by immigrants themselves in terms of contributing to cultural appropriateness in HIV/AIDS prevention interventions. There were a range of dominant interrelated themes in the views studies which pointed to broad commonalities across ethnicities, countries of origin, and experiences of migration which, in the views of immigrants, impacted on HIV prevention efforts. These included the association of HIV/AIDS with risk groups – such as homosexuals, prostitutes, people with multiple sexual partners – and a strong theme of not personalising HIV risks. [64 166 222 229 235 238 251 252] This sense that HIV happened to certain 'kinds of people' often resulted in profound feelings of shock when immigrants were diagnosed with HIV, such as those expressed by an African-born HIV-positive woman in the UK: "I wasn't that sort of person." [166(p.100)] Related to this were the high levels of stigma associated with HIV/AIDS among immigrant communities and a strong culture of silence and secrecy. [64 166 222 223 225 232 234-239 243 255 256] This silence and secrecy extended to any discussion of HIV in social and community contexts and – among people who were HIV-positive – contributed to a strong reluctance to disclose their HIV status in social networks – especially in co-ethnic social networks. Indeed the need for secrecy for HIV-positive immigrants was put forward as an important daily challenge (for example, see Doyal and Anderson [238]).

Other dominant themes included the important differences between male and female gender roles among many immigrant communities [53 228 232 240 245 249 253 254 256] which in the studies of Latino communities was often described using concepts such as *machismo*. "To be a strong male is to get sex and to be a strong woman is to resist sex." [53(p.411)] This theme was also expressed by Latino gay men whose sexual identity was often constructed in line with dominant gender roles. [52 243] Some Latina HIV-positive women who had experienced domestic violence saw gender roles as a contributing factor to both their experiences of violence and acquiring HIV. [232] An extension of this theme was a range of difficulties encountered by immigrants in negotiating and integrating

competing values, experiences, and information from their country of origin with values, experiences and information in the 'new' country. [53 64 224 226 229 237 244 248-251 253 255] This sense of living between 'two worlds' was characterised by a struggle between the retention or rejection of the past and the 'old' country. An example of this struggle was the retention of lay health understandings based on notions of 'cleanliness' about the causal mechanisms of HIV transmission and strategies for HIV prevention based on these (erroneous) lay understandings. [244 248 250] These lay understandings are in contrast to the biomedical understandings of HIV transmission which are incorporated into most HIV prevention interventions in high-income countries. Another example of this struggle was the widespread perception expressed by many HIV-positive immigrants that an HIV diagnosis was 'AIDS' and therefore a 'death sentence' which was sometimes related to information deficits (e.g., not knowing about HIV treatments or the difference between HIV and AIDS) but often was also related to direct, and often harrowing experiences, of knowing people with HIV/AIDS in their countries of birth where the stigma around HIV was profound and access to treatments difficult or impossible. [64 223 225 229 232 238 251]

As most studies of immigrants were concerned with the sexual transmission of HIV there were a multitude of potential specific resistances to the goals of the intervention reported by immigrants dependent on the cultural context. These included: condoms as barriers to cultural norms of intimacy, [232 246 248] gender roles mitigating against the negotiation of condoms for women with sexual partners [232 245 256] and for immigrant female sex workers with clients, [230] associations of condoms exclusively with contraception [231] or promiscuity, [224] the support of homophobia implicit in some cultural contexts and its impact on gay men's risk behaviours, [52 243] and the impact of widespread stigma on HIV-positive immigrants which may mitigate their ability to engage in safe behaviours to protect themselves and their sexual partners. [225] Here it is not possible to list all the reported resistances but to underscore that while the cultural contexts may not cause behaviours they may shape both protective and HIV risk behaviours. [232 252]

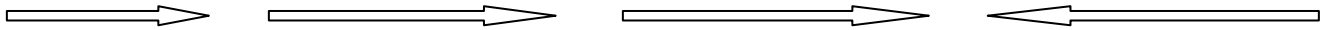
8.3.3 Summary

The very strong evidence to support this theorised mechanism was consistent across the intervention studies and the views studies indicating the pivotal role of this mechanism in primary and secondary interventions at group and community levels. This mechanism can be seen as another expression of the theme of adapting or 'matching' the intervention to the participants but here the focus is on cultural values likely to shape HIV-related protective

behaviours and risk behaviours and, in so doing, it challenges individualistic notions of risk by situating it in wider social and cultural contexts. This mechanism also raises specific challenges for the design and implementation of interventions in seeking to find an appropriate balance between 'old-country' and 'new-country' – or the 'past' and the 'present' context – across a range of dimensions including norms, [182] values, experiences [64 224 226 229 237 249 253] and understandings of critical information around HIV/AIDS. [244 248 250] The evidence to support this mechanism from the intervention and views studies was largely consistent with how the '*consonance*' mechanism had originally been theorised. However, the evidence gave deeper insights into how '*consonance*' is enacted, and potentially resisted, as a key mechanism to deepen the symbolic understanding by immigrants of the goals of HIV prevention interventions.

8.4 The evidence around '*specificity*' mechanisms

Fig. 6 The initial theorised implementation 'chain' of '*specificity*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Using ethnicity to target intervention – 'ethnic diversity'	*'Specificity'* of intervention with ethnicity of target group	Intervention is specific to the ethnicity of the target group	'Stereotyping' in use of ethnicity as primary element of participant identity

8.4.1 Findings from intervention studies

The evidence from the intervention studies moderately supported the importance of this mechanism - where the ethnicity of immigrants is used to give 'specificity' to the targeting of HIV/AIDS prevention interventions. Seventeen interventions reported sound evidence (APPENDIX I) and a further 19 interventions reported moderate evidence for this adaptation mechanism suggesting a moderate role of this theorised mechanism in contributing to program theory integrity in interventions with immigrants. This mechanism was found to be operationalised primarily through segmentation of populations using ethnicity or country of birth to target the intervention. [38 182 187 189 198 205 214 215 220] Another commonly used, though less specific, strategy was to target broader categories of immigrants such as Latinos, Asian and Pacific Islanders, or Africans, and within these broader categories it was commonly reported that there

was a dominant ethnicity such as Mexican, Filipino or Ugandan reached by the intervention. [110 165 182 195 196 199 204 206-212 214 216-218 221] Those studies that reported only partial evidence of the importance of this mechanism in interventions could be inferred to have made a choice to target multiple ethnicities or multiple immigrant communities in the intervention at the expense of this mechanism of '*specificity*'. [196 199 201 214 241 242] For example, Darrow et al [241] and Hlaing [242] reported on an intervention implemented in Florida in a multi-ethnic neighbourhood which had been identified in a prior mapping exercise as having higher rates of HIV notifications. Thus location or neighbourhood was the primary way to target the intervention while targeting the diverse ethnicities of the neighbourhood was a lower priority. Similarly, an ethnic media campaign to promote HIV testing among immigrants in Australia [191] used ethnicity data from routine HIV notifications to prioritise the immigrant populations for the intervention but chose to implement the campaign with 14 immigrant communities largely because this reflected the low but even spread of HIV across these multiple ethnicities.

The theorised response of immigrants to this mechanism is that they perceive the intervention is specific to their ethnicity. Evidence to support the '*specificity*' mechanism came from evaluations of interventions which reported differential responses to the intervention among some ethnicities as in the case of non-Mexican and non-Puerto Rican women in an intervention targeting Latinos in Chicago, [218] and non-Chinese and non-Filipino participants in an intervention targeting Asian and Pacific Islander gay men in San Francisco. [199] However, it is not possible to conclude that targeting the interventions using ethnicity as theorised in the '*specificity*' mechanism would have been sufficient to generate less differential responses among the diverse ethnicities of immigrant participants. Partial evidence of the mechanism (where there was a weak '*specificity*' mechanism) generally occurred in contexts where a heterogeneous target population was reported as a key limitation in interventions such as with African-born immigrants: one in Canada [210] and one in the UK. [214] Some positive impacts of this mechanism could be inferred from one intervention in Israel but it is difficult to attribute this to this theorised mechanism – the program theory – as distinct from the way the intervention was implemented – the program implementation. The intervention, targeting newly arrived Ethopian immigrants, was estimated to have reached 60% of these immigrants. [205] While it is clear that Ethiopian immigrants were specifically prioritised and targeted due to their high levels of HIV and recent arrival in traumatic circumstances to Israel, it is difficult to know if the significant reach reported in this study is due to the targeting of Ethiopian immigrants or due to the resources assigned to the task by public health officials in

Israel. [205] Similarly, an intervention in the UK that targeted African-born immigrants using a soccer tournament modelled on the African Nations Cup was reported to have reached a wide diversity of African-born young men. [214] It could be inferred that drawing on African nations in this way was an expression of ethnicity – and therefore '*specificity*' – and was seen as an effective way to reach a diversity of African-born immigrants. No resistances to this theorised mechanism were reported nor could be inferred from the intervention studies.

8.4.2 Findings from views studies

Moderate evidence to support this mechanism was reported in nine views studies (APPENDIX J) with sound evidence in a further eight studies indicating that '*specificity*' mechanisms were seen as moderately important by immigrants themselves in terms of contributing to cultural appropriateness in HIV/AIDS prevention interventions. There were a range of dominant and related themes in the views studies which centred on whether the differences ethnicity brings to the context of HIV/AIDS are outweighed by the commonalities of socioeconomic background, region of birth or experiences of migration. Important differences were reported between ethnic groups who in some contexts share the same label – for example, Latino or Asian – such as the differences emphasised: between Salvadorian and Chilean women in Melbourne; [53 253] by Dominicans in New York City when they compared themselves to Puerto Ricans; [249] and between South Asian and South-East Asian gay men in New York City. [227] Similarly, African-born HIV-positive women in the UK expressed a need for more ethnic specific services – rather than the pan-African services which already existed. [236] Another study of African-born HIV-positive immigrants in the UK highlighted the impact of migration on ethnicity – where participants reported leaving Africa with an ethnicity and arrived in the UK to be labelled as 'African' or 'refugee' or 'asylum seeker' which indicates a strong desire to maintain ethnicity after migration. [225] In this study African-born HIV-positive people reported valuing both pan-African social interactions for the shared values that were not British while simultaneously desiring '*specificity*' in terms of ethnicity. [225] Studies that emphasised the differences as well as the commonalities of ethnicities often positioned ethnicity alongside other factors such as socioeconomic background, experiences and reasons for migration, language and gender, [52 70 166 226 230 232 252 257] and sometimes reported the relevance of ethnicity as being related to levels of acculturation. [230] Finally, immigrants in a few studies felt that ethnicity was outweighed by other social factors in the context of HIV/AIDS. [223 251]

8.4.3 Summary

The strongest evidence to support this theorised mechanism came from the intervention studies with only moderate evidence of the role of this mechanism in contributing to cultural appropriateness of interventions from the views studies. This may be an artefact of the higher number of interventions which reported using ethnicity to target their intervention activities. Fewer views studies were framed in terms of ethnicity – choosing instead to research broader samples of immigrants (e.g., Latinos) or multi-ethnic samples. A central question thrown up by this mechanism relates to the degree to which commonalities and differences across ethnicities should be considered in the implementation of interventions. There was some evidence that the lack of '*specificity*' – where the heterogeneity of target populations was not sufficiently acknowledged in interventions – was a major limitation of two interventions with African-born immigrants. [210 214] It is unclear from the evidence whether the significance of ethnicity and '*specificity*' in terms of HIV prevention diminishes over time related to greater levels of acculturation in the 'new' country. [230] The evidence from the intervention and views studies points to the applicability of this theorised mechanism across primary and secondary HIV prevention interventions and across both group- and community-level interventions. The evidence to support this mechanism from the intervention and views studies was largely consistent with how the '*specificity*' mechanism had originally been theorised. However, the evidence gave deeper insights into how ethnicity and therefore '*specificity*' was highly related to context in the way that it was operationalised, and potentially resisted, as a mechanism to allow for appropriate targeting of immigrants in HIV prevention interventions.

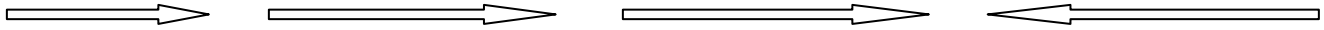
8.5 The evidence around '*embeddedness*' mechanisms

8.5.1 Findings from intervention studies

The evidence from the intervention studies strongly supported the importance of this mechanism – where the HIV/AIDS prevention interventions are 'embedded' in settings which are familiar to immigrants. Twenty-one interventions reported sound evidence and a further eight interventions reported moderate evidence (APPENDIX I) for this adaptation mechanism suggesting a strong role for this theorised mechanism in contributing to program theory integrity. This mechanism was found to be operationalised primarily through the settings where the intervention was encountered by immigrants or by using existing community structures to reach immigrants. The

intervention was often delivered through outreach to physical settings where immigrants gather including public places, community events, places of worship or recreation (e.g., cafes and bars) and even people's homes. [108 187 189 198 205 207 208 210 211 214 215 219 220 241 242] The settings could also be community structures such as ethnic media [108 191 195 207 218 239] which was sometimes employed as a stand-alone strategy or as an adjunct to outreach to physical settings. Examples of partial evidence of this mechanism included interventions delivered in settings where the immigrants were there for another reason such as clinics [212] or refugee reception centres. [190]

Fig. 7 The initial theorised implementation 'chain' of '*embeddedness*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	**Theorised mechanism of adaptation activity**	**Anticipated participant response to adaptation activity**	**Potential participant resistance to adaptation activity**
Delivering intervention through immigrant community settings/structures – 'settings'	*'Embeddedness '* of intervention within immigrant communities	Intervention is encountered in familiar and local settings	'Marginalising' when participants see themselves as part of the 'mainstream' society

The theorised response of immigrants to this mechanism is that they encounter the intervention in familiar and local settings. As with many other mechanisms, the intervention studies did not directly report the feedback of participants on the theorised '*embeddedness*' of the intervention though the reach of many interventions can be inferred, at least in part, to the use of community settings and existing community structures. Certainly those planning and delivering the intervention attributed '*embeddedness*' as an integral part of the intervention. For example there was a high reach in some interventions that used community settings including an intervention with Ethiopian immigrants in Israel, [205] with Latino gay men in San Francisco, [208] with Spanish, Portuguese and Turkish immigrants in Switzerland, [108] and with immigrant gay and bisexual farmworkers in Texas and California. [211] Interventions that used existing community structures such as ethnic media reported increased HIV testing among target immigrant communities though it was not possible to definitively link this outcome to the media campaign [191] and other interventions which were struggling to reach gay Latino immigrants in California reported success after implementing social marketing strategies in Latino gay/bisexual publications. [207]

There was no reported resistance to the '*embeddedness*' of interventions and no resistances could be inferred from the studies in the review.

8.5.2 Findings from views studies

The evidence to support this mechanism was almost equally divided across the 40 views studies between sound, moderate, partial and no evidence (APPENDIX J) indicating that '*embeddedness*' mechanisms were seen as less important by immigrants themselves in terms of cultural appropriateness in HIV/AIDS prevention interventions. Studies with sound or moderate evidence for '*embeddedness*' usually reported social networks as being ethnically stratified with immigrants' primary social interactions with other co-ethnics [222 257] or other ethnicities related by language in the case of Latinos in the USA [231 254] or region of birth in the case of African-born immigrants in the UK. [225 229 234] These social networks were also stratified in other ways such as the ethnic stratification of gay male bars in three North American cities and the ethnic stratification of commercial sex work among Latino and Asian sex workers in the USA. [230 249] A potential, but as yet unutilised role, for faith-based organisations was reported in two studies among African-born HIV-positive immigrants in the UK [229 238] indicating that a faith-based stratification might also be a way to reach some immigrant populations. Only one views study indicated evidence for the use of ethnic media. [228]

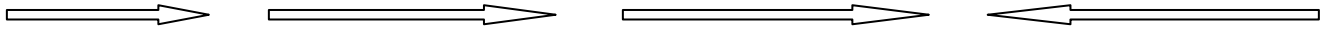
Studies with partial or no evidence for '*embeddedness*' in HIV/AIDS prevention often reported that immigrants received little support from co-ethnic communities. Many of these studies were among HIV-positive immigrants some of whom reported purposively withdrawing from co-ethnic family and friendship networks because of either actual or perceived breaches of confidentiality or high levels of HIV/AIDS-related social stigma. [64 70 166 223 232 235 236 238 239 243 251] This isolation from friends and families – a potential resistance to an '*embeddedness*' mechanism – was done out of perceived necessity even though as one Latino HIV-positive person explains: "For those of us who are infected, you don't know how important the family is for us: the family can help to cure without medicine even the most terrible physical pain." [235(p.439)] Here, we can see that the support of family is highly valued even as these HIV-positive individuals choose to isolate themselves from family and co-ethnic supports which might offer solace. Once again the need for secrecy for HIV-positive immigrants tended to outweigh the maintenance of established social networks in case their HIV diagnosis was revealed or suspected in their close social interactions. [64 70 223 255]

8.5.3 Summary

The evidence from the intervention and views studies suggested that this mechanism could be seen as another expression of 'closeness' found in '*authenticity*' mechanisms (which tended to relate to interpersonal 'closeness') functioning at a broader social and community level. Here interventions were encountered in familiar and accessible physical settings where immigrants gathered or, less commonly, through community structures such as ethnic media. Evidence from the views studies implied that friends, families and co-ethnic communities were seen as valuable sources of support and interventions had to infiltrate these 'ethnic worlds' and social networks to effectively reach immigrant populations in HIV prevention. The effectiveness of this mechanism in interventions was contingent on the social networks of the target immigrant population being ethnically and/or linguistically and/or racially stratified. For example, Moroccans in the Netherlands, [189] Latinos in the US [165] and African-born immigrants in the UK [214] (where there was some evidence of a pan-African identity), were examples from interventions included in the review of ethnic, linguistic and racial stratification respectively. In addition, there was some evidence suggesting the utility of faith-based stratification of immigrant social networks and the use of faith-based settings for 'embedding' interventions. However, while only minimal use of faith-based settings was found in a single intervention included in this review, [189] it is reasonable to conclude that this might be a potential avenue to follow in certain contexts such as with African-born immigrants whose participation in faith-based organisations might transcend ethnic and linguistic differences. The evidence from intervention studies suggests that '*embeddedness*' has most utility in terms of primary HIV prevention. The views studies indicated that HIV-positive immigrants often purposively withdrew from ethnic, linguistic and racial networks (preferring instead the anonymity of other networks) as a strategy to maintain secrecy around their HIV status and avoid potential or actual stigma associated with HIV in their ethnic community. Consequently, '*embeddedness*' would seem to have little utility in secondary HIV prevention in these contexts. The evidence to support this mechanism from the intervention and views studies was largely consistent with how the '*embeddedness*' mechanism had originally been theorised. However, the evidence gave deeper insights into how '*embeddedness*' was contingent on the stratification of immigrant communities to 'embed' HIV prevention interventions within familiar settings and structures.

8.6 The evidence around '*endorsement*' mechanisms

Fig. 8 The initial theorised implementation 'chain' of '*endorsement*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Build coalition with immigrant community institutions – 'community consultation'	*'Endorsement'* of intervention by community leaders	Intervention is 'allowed' and supported by immigrant community structures	'Rejection' of immigrant community leaders/sentinels in a new 'free' society

8.6.1 Findings from intervention studies

There was no evidence or only partial evidence from the intervention studies to support the importance of this mechanism in more than half of the HIV/AIDS prevention interventions included in the review. Twenty-one interventions reported no evidence and a further three interventions reported only partial evidence (APPENDIX I) for this adaptation mechanism suggesting a weak role for this theorised mechanism in contributing to program theory integrity. Against this, 11 interventions reported strong evidence and a further seven interventions reported moderate evidence of this mechanism where the HIV/AIDS prevention is 'endorsed' by immigrant community leaders (APPENDIX I). Among these interventions the mechanism was found to be guided by principles of community participation and operationalised in diverse ways including: interventions being implemented in part by immigrant community-based organisations with the endorsement of community leaders, [108 198 201 209 210 214 217] input by community members in formative evaluations of interventions, [206 207 241] or interventions developed by, and extensively focus-tested with, the target group. [165 187 208 211 216] This evidence indicated a slight departure from how I had originally theorised this mechanism and this refinement will be discussed below (8.6.3).

The theorised response of immigrants to this mechanism is that they perceive the intervention is 'allowed' and supported by their community. In general the interventions did not report on the specific feedback of program participants on this mechanism. Specifically, as many studies reported no evidence or only partial evidence it was difficult to infer any positive impacts or

resistances of this mechanism from any of these studies. In those studies that reported sound or moderate evidence for this mechanism specific feedback on this mechanism was limited. One study reported on the endorsement of the soccer managers, players and captains as a key to an HIV/AIDS soccer tournament gaining acceptance among African-born communities in the UK [214] while another reported on the establishment of a dedicated community-based HIV/AIDS agency and assessed the positive impact of this mechanism in terms of the ability of this agency to be set up within existing multi-ethnic Asian and Pacific Islander community structures. [201] The sole evidence of resistance attributable to this mechanism was reported in one study where there was widespread denial of HIV/AIDS as a pertinent health issue among community leaders from three immigrant communities in Switzerland in the first implementation phase of a national program which necessitated a change in the planning and implementation of the intervention. [108] This was slightly different to how I had originally theorised the key resistance to this mechanism.

8.6.2 Findings from views studies

There was very little evidence to support this mechanism across the 40 views studies with 32 studies reporting no evidence or only partial evidence (APPENDIX J) indicating that '*endorsement*' mechanisms were seen as less important by immigrants themselves in terms of cultural appropriateness in HIV/AIDS prevention interventions. Only eight studies reported sound or moderate evidence to support this mechanism and this minority of studies stressed the potential for '*endorsement*' mechanisms to mitigate some of the stigma associated with HIV/AIDS with faith leaders singled out as having a strong role to play in some studies, [166 222 229 236] while other studies stressed the potential role of ethnic community endorsement to promote social capital in ways that were conducive to HIV/AIDS prevention, [53 249 257] and one study singled out the opportunities for stronger coalition-building between HIV/AIDS agencies and immigrant community agencies to facilitate endorsement of HIV/AIDS interventions. [224]

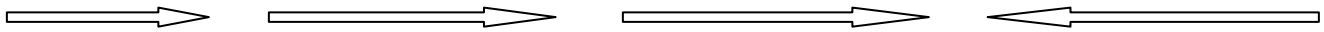
8.6.3 Summary

This mechanism was not widely found in interventions but where it was reported it was seen to offer overarching support for the goals of the intervention in a value-laden area of public health that nonetheless crosses into what are seen as private and moral domains. The views studies indicated that the endorsement of community leaders – including faith-based leaders – could help mitigate some of the stigma around HIV/AIDS. In practice, securing the endorsement of faith-based leaders who are often seen as sources of compassion and guardians of morality can be

extremely challenging. The evidence to support this mechanism from the intervention and views studies was somewhat different with how '*endorsement*' had originally been theorised. Originally, '*endorsement*' activities had been theorised to include partnership work with immigrant community institutions but the limited evidence from the intervention and views studies clarified the key activities of '*endorsement*' mechanisms as one of community consultation. Thus the review of evidence clarified how '*endorsement*' was enacted, and potentially resisted, in real-world HIV interventions with immigrants.

8.7 The evidence around '*framing*' mechanisms

Fig. 9 The initial theorised implementation 'chain' of '*framing*' mechanisms in HIV prevention interventions with immigrants



Intervention adaptation activity	Theorised mechanism of adaptation activity	Anticipated participant response to adaptation activity	Potential participant resistance to adaptation activity
Evaluating intervention against immigrant community expectations – 'priority setting'	*'Framing'* of intervention outcomes with immigrant participants	Intervention matches immigrant participants' expectations for effectiveness	'Similarity' of expectations around effectiveness between immigrants and interventionists

8.7.1 Findings from intervention studies

The evidence around this mechanism was equally divided across the intervention studies between sound, moderate and partial evidence or no evidence. Twenty studies reported sound or moderate evidence to support the importance of this mechanism while 23 studies reported partial or no evidence for the adaptation mechanism – a mechanism where the HIV/AIDS prevention interventions outcomes are 'framed' within the wider contexts of immigrants' lives (APPENDIX I). This suggests a mixed regard for the role of this theorised mechanism in contributing to program theory integrity in HIV/AIDS interventions. Among the interventions which reported strong or moderate evidence of this mechanism it was found to be operationalised in diverse ways including: interventions being implemented and led by strong coalitions within immigrant communities; [108 198 206 207 209 210 214 216 217 241] framing the HIV/AIDS intervention within wider contexts including racism and homophobia for Latino gay men [208] and gender roles for women at risk of domestic violence; [217] evidence of adjusting the program implementation or program

evaluation protocols to address issues which immigrant participants had raised; [182 189 207 211 213] evidence of consideration of the competing priorities (other than HIV/AIDS) faced by immigrants in high-income countries; [210] and evidence of the ordering of priorities in the framing of HIV/AIDS as a 'general immigrant community' problem in the first phase of a national program in Switzerland to avoid the potentially more difficult issues of homosexuality, injecting drug use and sex work until the partnership with immigrant communities was more established. [108] This intervention from Switzerland illustrates a process to establish a partnership or coalition with immigrant community institutions which is integral to this theorised mechanism in the implementation of interventions. Conner et al [207] describe the development of effective partnerships as a three-way process from "positive initial contacts, experiences (initially low-pressure ones) that develop the partnership, and sufficient time to develop a relationship before a serious challenge arises" (p. 373). This indicated an important difference to this theorised mechanism which I discuss below (8.7.3).

The theorised response of immigrants to this mechanism is that the intervention outcomes match the immigrant communities' expectations in HIV/AIDS prevention. As with many other mechanisms, the intervention studies did not directly report the feedback of participants on the theorised '*framing*' of the intervention though the overall effect of many interventions can be inferred, at least in part, to '*framing*' the intervention with immigrants themselves. It could be inferred from some interventions that immigrants had the power to influence the planning, delivery and evaluation phases of the intervention and to assist in contextualising HIV/AIDS prevention within wider social determinants like migration-related stressors, racism and homophobia. Some resistances to the '*framing*' mechanism were reported. These resistances defy easy categorisation and included: resistance to empowerment models of HIV prevention which participants saw as negating their resilience as immigrants; [165] resistance by participants in evaluation processes to HIV-related research; [215] resistance to HIV prevention efforts with regular sexual partners and abstinence messages; [110 189 242] and even resistances to the Centers for Disease Control and Prevention categories of HIV transmission risks. [216]

8.7.2 Findings from views studies

There was overwhelming evidence to support this mechanism with 32 of the 40 views studies reporting sound evidence and a further seven studies reporting moderate evidence (APPENDIX J) indicating that '*framing*' mechanisms were seen as crucial by immigrants themselves in terms

of contributing to the cultural appropriateness of HIV/AIDS prevention interventions. There were a range of dominant interrelated themes in the views studies which pointed to broad commonalities across ethnicities, countries of origin, and experiences of migration which impacted on the '*framing*' of interventions and the priority accorded to HIV prevention efforts in immigrants' lives. These could be categorised under two broad themes: migration-related stressors and notions of individual responsibility. Firstly, the interrelated themes of migration-related stressors included migration goals – which generally involved some form of 'escape', or at the very least, a desire for 'betterment' – which were often thwarted in high-income countries through harsh living conditions – particularly in struggles for employment, housing and coping with chronic and acute social isolation. [64 166 222 228 232 235 253 257] For HIV-positive immigrants the 'escape' was also paradoxically a form of 'imprisonment' due to the potential difficulties of cross-border travel and the deeper anxiety associated with not being able to return 'home' to live with the support of family as at 'home' they would not be able to afford access to anti-retroviral treatments or good HIV medical care. [70 223 232 235 237-239] Migration-related stressors were further exacerbated among those who were 'undocumented', who were seeking asylum or who did not have permanent residency in the high-income country. [64 133 166 222 223 228 232 237 238] The struggle to 'get ahead' was also compounded by the need to send remittances to countries of birth to support families [230 231] and/or pay off people smugglers. [222] For some gay and bisexual male immigrants the 'escape' of migration offered hopes of living without the social stigma of homosexuality in their countries of birth [64 225 254] only to be confronted with racism and the impacts of class and poverty in the destination country. [52 226 227 243 252] Pre-migration trauma and post-migration mental health issues [222 236 258] were reported as another migration-related stressor of life in the destination country. The positioning of these multiple migration-related stressors as "distal" (p. 2) variables is challenged by Diaz et al [52] who assert that they "must be understood as current and immediate" (p. 2) to the context of '*framing*' of HIV prevention interventions. A second broad theme was the importance of notions of collectivism as opposed to individualism for immigrants in framing HIV prevention interventions. This collectivist framing of an immigrant's identity was seen to impact on many areas of HIV prevention [232 233 237 245 251 255 256] and pointed to the limits of cognitive and individualistic notions of responsibility for immigrants who live within frames of collective responsibility. [245] Related to the notion of responsibility was the fatalism or lack of individual agency expressed in two studies of HIV-positive immigrants encapsulated in the term *'la suerte'*(or luck) by Latinos in the USA and 'the will of God' by Africans in the UK. [229 232] In this

world view people are powerless [232] and lack any agency against the "immutable, external force" (p. 349) of *'la suerte'*, "one either has or does not have good luck" (p. 349).

8.7.3 Summary

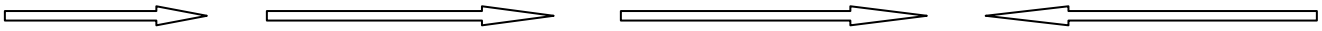
In a sense this mechanism is an extension of the '*endorsement*' mechanism to deepen the engagement of immigrants in sharing the power to plan, implement and evaluate HIV/AIDS interventions. This evidence deviated significantly from the initial implementation 'chain' for '*framing*'. As originally theorised this mechanism focused strongly on the evaluation activities of interventions matching immigrant community expectations for effectiveness. The review of evidence suggested that we need to broaden this activity to include other key aspects of decision making in interventions. The strongest evidence to support this mechanism came from the views studies which may be reflective of the predominance of qualitative research methods in the views studies included in the review – research methods which explicitly attempt to share power in allowing participants to frame insights relevant to HIV/AIDS issues. Thus the review of evidence clarified how '*framing*' was enacted, and potentially resisted, in real-world HIV interventions with immigrants.

8.8 Revised and refined program mechanisms

The preceding findings led to a revision and refinement of the implementation 'chains' and mechanisms operating in HIV prevention interventions with immigrants from developing and middle-income countries living in high-income countries which is summarised in Fig. 10 below.

As can be seen from the evidence from this review in reality these 'chains' can operate in non-linear and unpredictable ways and are made up of relationships between mechanisms, outcomes *and* the contexts in which they occur. [134 135] The adaptation mechanisms may elicit a resistance which goes against the intervention goals or the anticipated response may not occur in certain contexts.[134 135]

Fig. 10 The refined theorised implementation 'chains' in HIV prevention interventions with immigrants



Intervention adaptation activity	**Theorised mechanism of adaptation activity**	**Anticipated participant response to adaptation activity**	**Potential participant resistance to adaptation activity**
Staffing the intervention with people who are bicultural, matched to the target group	*'Authenticity'* of intervention	Intervention is 'for them' as the staff are 'like them'	'Tokenism' of staffing, heterogeneity of target group leading to difficulties in 'matching', rejection of bicultural staff by HIV-positive immigrants
Using immigrant community languages, matched to the target group	*'Understanding'* of intervention	Understand – in a literal sense – intervention messages	'Mistranslation' in use of community languages in written materials and by interpreters
Adapting intervention content to suit the target population	*'Consonance'* of intervention with cultural values, norms and symbols	Intervention has recognisable elements of the culture of participants – to deepen the symbolic understanding of the intervention	'Dissonance', especially if participants are highly acculturated, where culture is a source of oppression and HIV-related stigma
Using ethnicity to target intervention to immigrants	*'Specificity'* of intervention with ethnicity of target group	Intervention is specific to the ethnicity of the target group	'Stereotyping' in use of ethnicity as primary element of participant identity without adequate focus on other elements of identity including gender and sexuality
Delivering intervention through immigrant community structures and settings	*'Embeddedness'* of intervention within immigrant communities	Intervention is encountered in familiar and local settings	'Marginalising' when participants do not belong or have chosen to withdraw from co-ethnic networks
Consulting with immigrant communities and leaders	*'Endorsement'* of intervention by immigrants or immigrant community leaders	Intervention is 'allowed' and supported by immigrant communities	'Denial' by immigrant community leaders of HIV as an important health issue
Partnering and involving immigrant community institutions in decision making and setting priorities for interventions	*'Framing'* of intervention with and by immigrants	Intervention matches immigrant participants' expectations for key HIV priorities and takes wider social contexts into account in addressing these priorities	'Rejection' of the priority accorded to HIV by immigrant community institutions

Section Four DISCUSSION

Chapter 9 Implications of this review of evidence for policy and practice

9.1 Introduction

At the outset this review of evidence sought to answer a research question which looked at 'how and why' interventions with immigrants 'work', 'for whom', and in what contexts encapsulated in the research question:

What are the key program theories or mechanisms for cultural appropriateness operating in primary and secondary HIV/AIDS prevention interventions at group and community levels among immigrants from developing and middle-income countries living in high-income countries?

The aims of the research were to:

- Identify an appropriate research methodology and methods to answer the research question
- Identify key program theories for explanation in the review of evidence
- Establish frameworks to allow for external input to the research
- Search for primary data related to the key program theories in the review
- Appraise and extract data from primary studies found
- Analyse and synthesise the data to refine program theories
- Enhance the potential for the research to influence policy and practice by using a planned approach to research transfer

In this chapter I will discuss the evidence from the review to point to the strengths, typical dilemmas and limitations of each of the theorised mechanisms and discuss these findings in relation to the wider literature.

9.2 '*Authenticity*' mechanisms in interventions

This mechanism was found to be operationalised primarily through the use of people who are bicultural – usually in terms of ethnicity – as community educators in the design and delivery of the intervention and this was sometimes further refined by employing staff from the same sexuality and/or gender. From the review of evidence a less common way that '*authenticity*' was operationalised related to the visual representation or imagery of the intervention 'matching' the participants. The evidence to support '*authenticity*' came from the intervention studies and was less strong in the views studies where HIV-positive immigrants expressed a paramount need for 'secrecy' of their HIV status. Thus '*authenticity*' mechanisms in ethnically 'matching' staff may be more promising in primary HIV prevention and less useful in secondary HIV prevention interventions.

A central premise of '*authenticity*' mechanisms is that 'closeness' between what Durantini et al call the "agents of change" [179(p.212)] (those implementing the intervention) and the intervention participants will positively influence the intervention goals in terms of HIV prevention. The strengths of this peer-based approach are widely cited in the literature in HIV prevention with immigrants. [104 109 161 172 174 175 179 203] However, this central premise of 'closeness' in peer-based approaches has rarely been empirically tested to determine if it contributes to the effectiveness of HIV interventions and, where it has, the results have been uneven. Some reviews have found that matching staff demographically (e.g., ethnicity) or behaviourally (e.g., drug use) in HIV prevention to be limited but, nonetheless, important in contributing to behaviour change. [179] However, the premise of 'closeness' also forms a central part of broader theoretical approaches to HIV prevention such as the diffusion model of change which emphasises the benefits of homophily as an important basis for trust and credibility among intervention participants. [103]

An important dilemma that arises in the use of '*authenticity*' in HIV prevention with immigrants is to assess which 'culture' of the participants should be used in 'matching'. For example, should an intervention with Puerto Rican injecting drug users match intervention staff primarily along the lines of the 'ethnic culture' or the 'drug culture' of participants. [109] In most cases it would appear that for HIV prevention with immigrants 'culture' is often synonymous with 'ethnic culture'. [161] In contexts where the approach is to match staff along 'ethnic culture' lines, the heterogeneity in terms of ethnicity of populations can present another dilemma to the utility of

'*authenticity*' mechanisms. It may be hard to define which ethnicities to prioritise in terms of staffing, while staffing an intervention with multi-ethnic staff can contribute significant costs, which may be hard to justify – even if there were compelling evidence that this would generate positive program outcomes. For example, how can we plan HIV prevention programs when immigrant populations reside in multi-ethnic societies and live in multi-ethnic social contexts? Interventions from Florida point to a potential response to this dilemma by using the neighbourhood as the primary way to target the intervention and then attending to the multi-ethnic nature of the population of these neighbourhoods as a secondary consideration. [241] [242] Other interventions overcame this 'multi-ethnic dilemma' through employing staff from a diversity of ethnicities – often as volunteers or casual staff [108] [191] [210] and in some cases having prioritised the ethnicities using routine HIV surveillance data which indicated elevated risks of HIV. [191] Some key limitations in the implementation of this theorised mechanism come from a national program in Switzerland which reported a very high turnover of multi-ethnic staff (mainly due to migration) and a poorly defined professional role of these multi-ethnic bicultural community educators contributing to challenges in the consistent implementation of the intervention. [108] The evidence to refine '*authenticity*' further through gender was contradictory in this review which diverges from studies which suggest that employing ethnically-matched female immigrants to carry out interventions to reach female immigrants contributes to cultural appropriateness. [174] There was very little evidence to support refining this mechanism along sexuality or religious affiliation lines in the studies reviewed. Further, there was very little evidence as to cultural appropriateness of refining '*authenticity*' mechanisms in secondary HIV prevention interventions through the use of HIV-positive bicultural staff though this may be largely due to few dedicated secondary HIV prevention interventions included in the review.

While the intervention studies included in the review were almost equally divided between group- and community-level interventions, [14] few of the community-level interventions used mass media. This may explain to an extent the dominance of bicultural staff (who were also often matched in terms of gender and sexuality) as the primary way this mechanism is operationalised in health promotion practice in this area. If more community-level interventions using mass media and a social marketing approach had been included in the review it is possible that the representation of participants in the imagery of the intervention may have been a more prominent way to operationalise '*authenticity*' in practice.

9.3 '*Understanding*' mechanisms in interventions

This mechanism was found to be operationalised primarily through the use of the first languages of immigrants themselves in the delivery and evaluation of interventions primarily in contexts where these differed from the dominant destination country language(s). There was strong evidence to support this theorised mechanism across the intervention and the views studies to allow immigrants to understand in a literal sense the communication that is central to primary or secondary HIV prevention interventions. The evidence suggests that what is valued most by immigrants, especially those who are 'excluded' by their limited language skills in the high-income country, is the opportunity to have a 'shared language' rather than simply the 'closeness' of 'shared culture' offered by '*authenticity*' mechanisms. This is hardly surprising given the critical importance of language, and language proficiency, in complex human communication. [12] Using community languages can present both challenges and opportunities for interventions. Challenges in HIV prevention contexts for '*understanding*' mechanisms as theorised in this review can include limited community language terms to communicate or talk about key risk behaviours like sex. [224] Opportunities can include the potential to use nuanced language which may increase the literal understanding and even the symbolic understanding of the intervention among immigrant participants. [224 245] Some of the evidence in relation to '*understanding*' in interventions points to the problems associated with translation (or rather mistranslation) in immigrant languages to communicate culturally appropriate messages to immigrant groups and communities. [215] An additional limitation associated with '*understanding*' mechanisms which was not commonly reported in the studies included in the review, but which has been reported elsewhere, is the limitation of written-language resources in HIV prevention interventions for immigrants. [174] As with '*authenticity*' the heterogeneity in terms of languages spoken by immigrants in many high-income countries can present a dilemma to the practical application of '*understanding*' mechanisms. Here, too, it may be hard to define which of the multiple languages spoken in immigrant communities to prioritise and utilise in the intervention with multiple translations potentially contributing significant costs, especially for smaller immigrant populations who were reported to be poorly served in terms of access to HIV/AIDS information in their preferred language. [222 247] However, it is important to note that in some contexts the issue of using community languages is less important in addressing barriers to HIV prevention. In a comprehensive literature review carried out in Europe of research relevant to the development of interventions for immigrants from sub-Saharan Africa, language did not feature as a significant

barrier to be addressed in effective HIV prevention interventions [115] which may be due to a shared lingua franca – such as English or French often derived from a colonial past – being widely spoken in these diverse African-born communities.

9.4 '*Consonance*' mechanisms in interventions

This mechanism was found to be operationalised primarily through drawing on formal or informal research to uncover dominant cultural values which were then incorporated into the intervention content and there was very strong evidence to support this theorised mechanism across the intervention and views studies pointing to its utility in both primary and secondary HIV prevention. This mechanism can be seen as another expression of the theme of 'matching' the intervention to the immigrant participants with a focus here on 'matching' the intervention with cultural values, norms and symbols to increase the symbolic understanding of interventions. However, studies that have attempted to empirically test if incorporating cultural elements contributes to the effectiveness of HIV interventions with immigrants have found mixed results. [109] There is support for '*consonance*' as theorised in this review in the wider literature where there is a strong critique of cognitive and behavioural individualistic approaches to HIV prevention among immigrants for their failure to account for the wider impact of social and cultural influences on behaviour. [6 12 104 167-172] '*Consonance*' mechanisms also share to some extent the territory of broader theoretical frameworks in health promotion interventions, in particular, the widely used social cognitive theory which builds upon the importance of social norms. [99 102]

However, this territory of norms and cultural values in HIV prevention with immigrants can present a range of important dilemmas. The first dilemma is that HIV interventions may need to challenge dominant cultural norms with 'new-country' values in the intervention content and thus the intervention may be seen to be subversive to deeply held values that have been 'retained' from the 'old- country'. [183] Yet the same 'subversive' content may be appealing to other immigrants such as women or gay men who are potentially more likely to have experienced marginalisation within 'old-country' values. [53 183 208] Related to this is the issue that modern plural nation-states often strive to achieve a "society which is unitary in the public domain but which encourages diversity in what is thought of as private or communal matters". [85(p.208)] Arguably, the behaviours which drive HIV transmission are intensely private and yet they form part of an important public health issue. In response to this issue Shtarkshall and Soskolne [182]

propose using "cultural insighters" (p. 7) – immigrants drawn from the target community of the intervention – to negotiate this terrain and to address the tensions that have been found when attempting to reconcile immigrant and 'new-country' values in other areas such as education. [85] These "cultural insighters" could potentially contribute to three of the theorised mechanisms – '*authenticity*', '*understanding*' and '*consonance*' – in the implementation of interventions.

The second dilemma, which was most prominent in the views studies, indicates that immigrants across a range of contexts 'distanced' themselves from HIV/AIDS as something that did not happen to 'people like them' and this 'denial' was underpinned by stigma, silence and secrecy. This was especially strong in studies of HIV-positive immigrants pointing to the need for '*consonance*' in primary and secondary HIV prevention to address the widespread denial of HIV risk as a core element of interventions. Indeed a comprehensive literature review carried out in Europe of research relevant to the development of interventions for immigrants from sub-Saharan Africa nominated this widespread denial as one of the main reasons behind low rates of HIV testing among immigrants. [115]

The third dilemma raised by this theorised mechanism relates to the limitations of 'knowing' what in fact the 'cultural values' are in any given immigrant population. In this review only the broad 'Latino community', [6] and to some extent Latino gay men, [208] in the USA had a body of social sciences literature that might be easily employed by those designing an HIV/AIDS prevention intervention for immigrants. In addition, even if you 'know' the cultural values you also need to disentangle those that are protective for HIV risk behaviours from those that point towards increased risk in primary and secondary HIV prevention. This raises an important limitation in relation to this mechanism: in practice, many HIV prevention interventions may simply have to 'fly blind' with only informal research or community consultation processes, or follow Shtarkshall and Soskolne's [182] strategy of "cultural insighters" (p. 7), to guide the development of the content and implementation of interventions.

9.5 '*Specificity*' mechanisms in interventions

This mechanism was found to be operationalised primarily through the segmentation of populations using ethnicity or country of birth to target the intervention or through broader targeting of immigrants such as Latinos, Asian and Pacific Islanders, or Africans – within which it was reported that there was a dominant ethnicity such as Mexican, Filipino or Ugandan that

was primarily targeted by the intervention. The strongest evidence to support this theorised mechanism came from the intervention studies with only moderate evidence from the views studies. This may be an artefact of many of the intervention studies targeting along ethnicity lines while the views studies tended to be made up of broader samples (in terms of ethnicity) of immigrants (e.g., Latinos) or multi-ethnic samples. The mixed evidence for this mechanism is consistent with the theory of ethnic groups in the literature which sees them as being defined in a social context derived from "the ethnicity claimed by people themselves and the ethnicity attributed to them by others". [82(p.3)] A second and related question raised by this theorised mechanism relates to the impact of ethnicity on health, or more particularly, is ethnicity an important determinant of HIV-related health among immigrants? From the literature Fenton [76(p.181)] argues that while ethnicity can be a source of motivation it rarely is, nor does it usually constitute the principal framework of social organisation, nor is it the fundamental principle of action. The evidence from this review is broadly in line with this and suggests that interventions should situate ethnicity alongside other variations in immigrant target populations. This can be interpreted as a limitation of '*specificity*' or, at the very least, the evidence points to the insufficiency of ethnicity or '*specificity*' alone to address important variations across immigrant populations based on gender, sexual orientation and social class that are pertinent to HIV/AIDS prevention with immigrants. [167] [162] In considering these diverse variations, there is some evidence to suggest a greater weighting be placed on ethnicity among immigrants who are less acculturated in the destination country though it is unclear if acculturation increases or decreases HIV-related risks. [167] [174]

A key question thrown up by this mechanism relates to the degree to which commonalities and differences across ethnicities should be considered in the implementation of interventions. In other words, e.g., to what degree are Thai-born Australians similar to, but unlike, other Asian-born immigrants in terms of HIV prevention? People who share the same label in high-income countries – Latino, Asian, African – can be vastly different in terms of ethnicity and it has been recommended that these within-group differences in populations that are labelled in this way should not be ignored. [112] [175] There was some evidence that the lack of '*specificity*' – where the heterogeneity of target populations was not sufficiently acknowledged in interventions – was a limitation of interventions with African-born immigrants. [210] [214] Migration itself is one of the social contexts which can impact on ethnicity as in the situation of immigrants who leave their

home country with an ethnicity, say, Ugandan, and become labelled simply as 'African' when they settle in their new country. [225]

9.6 '*Embeddedness*' mechanisms in interventions

This mechanism was found to be operationalised primarily through the settings where the intervention was encountered by immigrants or, less commonly, by using community structures to reach immigrants. The evidence from the intervention and views studies suggested that this mechanism could be seen as another expression of 'closeness' and familiarity, described earlier in '*authenticity*', but related to the social worlds of immigrants. Here interventions were encountered in familiar settings where immigrants gathered (e.g., where they ate, worshipped, shopped, or played sport) or, less commonly, through community structures such as ethnic media. The wider literature of health promotion acknowledges the role of using settings that are familiar to the target group [104 172 175] and of using community structures such as ethnic media [104 174] to implement effective interventions with immigrants. The evidence from this review suggests that the contribution of this mechanism to the cultural appropriateness of HIV prevention interventions is contingent on the immigrant target group being stratified along ethnic, linguistic, racial or religious lines. For example, the evidence implied that the 'ethnic worlds' of friends, families and communities are a valuable source of support and interventions can infiltrate these 'ethnic worlds' to effectively reach immigrant populations in HIV prevention. Where there is no 'ethnic world' to infiltrate – where the target immigrant population is socially dispersed with no unifying networks or connections – the utility of '*embeddedness*' mechanisms is diminished. Similarly, the utility of this mechanism is possibly diminished in secondary HIV prevention as HIV-positive immigrants are widely reported to withdraw from co-ethnic networks to maintain the 'secret' of their HIV status. [234] Other marginalised groups of immigrants, such as gay men, injecting drug users and sex workers, may also purposively withdraw from co-ethnic networks which suggests that primary prevention interventions seeking to use '*embeddeddness*' with these groups of immigrants need to respond to this context in the choice of settings for delivering the intervention (e.g., delivering the intervention at gay bars frequented by Latino gay men). '*Embeddedness*' mechanisms may be particularly relevant in contexts where there is evidence of disparities in terms of access by immigrants to HIV-related health services by implementing outreach programs and 'embedding' interventions in physical and other settings which are familiar in the daily lives of immigrants.

9.7 '*Endorsement*' mechanisms in interventions

This mechanism was found to be guided by principles of community participation or consumer involvement and operationalised in diverse ways including interventions being implemented with the '*endorsement*' of community leaders, or through extensive input by community members in formative evaluations of interventions, or through the interventions being developed by, and extensively focus-tested with, members of the target group. This mechanism was not widely found in intervention or views studies but where it was reported it was seen to offer overarching support for the goals of HIV/AIDS interventions. This is in line with the literature on effective health promotion with immigrants. [175] It can be assumed that securing the endorsement of immigrant community leaders –including faith-based leaders – can assist in destigmatising HIV/AIDS for immigrants. In practice, securing the endorsement of immigrant community leaders can involve the same dilemmas as outlined previously where modern plural nation-states are striving to achieve a society which is unitary in the public domain but diverse in the private domain. [85(p.208)] The behaviours which drive HIV transmission are intensely private and yet they form part of an important public health issue which can make immigrant community leaders reluctant to endorse what can be seen to be a contentious and stigmatised health issue. Faith-based institutions may be the least likely of immigrant community institutions to endorse HIV/AIDS interventions as a recent study of Asian and Pacific Islander institutions in New York City found. [200 202] The study categorised faith-based institutions as "community sentinels" (p. 244) (the least progressive of the immigrant community institutions studied) and arts organisations categorised as "paradigm shifters" (p. 244) (the most progressive institutions in terms of willingness to support HIV/AIDS interventions). [200] Indeed the key resistance reported around this mechanism in this review of evidence was a denial and reticence among immigrant community leaders to be associated with HIV/AIDS interventions which mirrors the findings of Chin et al's earlier study of Asian community institutions in New York City. [202] This reticence may be in part due to seeking to distance themselves from interventions that seek to address issues on the margins of the ethnic community, such as homophobic attitudes towards gay men. [170] It is especially important in HIV/AIDS prevention to take a broad view of the term 'community leader' as there are marginalised groups of immigrants, such as gay men, injecting drug users and sex workers, who may not be part of formal immigrant community structures. For example, '*endorsement*' as theorised here can be through consultation with 'leaders' drawn from networks of Latino injecting drug users.

9.8 '*Framing*' mechanisms in interventions

This mechanism was found operationalised in diverse ways but essentially where this mechanism was found the intervention was situated within the wider context of immigrants' lives in the destination country. In a sense this mechanism is an extension of the '*endorsement*' mechanisms to deepen the engagement of immigrants in sharing the power to plan, implement and evaluate HIV/AIDS interventions. The mixed evidence to support the importance of this mechanism from intervention and views studies may in part be a reflection of the stage of development that prevention interventions with immigrants has reached. Others have characterised early HIV prevention efforts in high-income countries as being reliant on communication to change individual behaviour followed by a gradual evolution towards community-level interventions alongside a growing recognition that sociopolitical interventions can enhance and sustain behaviour change – so that the focus is less on communication to 'persuade' and more on environments that 'enable' people to change. [101] In this, '*framing*' mechanisms as theorised in this review can be situated within the central movement in public health which sees health promotion as enabling people and communities to take control of their health, [98 99] in recognition that "health is won by people themselves". [98(p.135)] Partnering with immigrant community organisations, responding to the impacts of discrimination (such as racism, sexism and homophobia), adjusting the intervention to respond to the competing priorities (other than HIV/AIDS) of immigrants' lives or sequencing the priorities in line with immigrant community expectations were examples of this mechanism reported in the intervention studies. As with '*endorsement*', '*framing*' in certain contexts and for some groups of immigrants may need to be with informal organisations such as networks of immigrant sex workers. These examples share a notion of shared decision making in interventions which is supported in the literature on HIV/AIDS interventions with immigrants. [99 104 162 167 175 178 180] The views studies suggested a range of wider contexts that could be used to frame interventions under two broad themes of diverse migration-related stressors and framing interventions within notions of collective identity and responsibility. Migration-related stressors could include issues of access to employment, education or housing, and coping with acute or chronic social isolation, which were further exacerbated among those who were not permanent residents. Diaz argues forcefully for understanding these stressors as immediate and current rather than distal stressors in terms of HIV prevention. [208] Similarly, notions of individual agency may be weaker in immigrant

communities and HIV/AIDS primary and secondary prevention may need to be framed within a notion of collective identity and responsibility so that interventions are congruent with the immigrant community world view. In Mao et al's study of Asian gay men in Sydney, [54] aspects of a gay identity and an Asian identity were seen as being conflicted for the participants with much of the tension around the notion of collectivism, which participants strongly valued as a part of their Asian cultures, and individualism which was perceived to be strongly valued in gay Australian communities.

9.9 Lessons learned in this review and suggestions for future research

This review of evidence could have been more straightforward had I chosen to carry out a systematic review with explicit inclusion and exclusion criteria focused on outcomes and study types at the outset. While the systematic searches would have been just as comprehensive (unless I used filters for study types) it is likely that applying the kinds of criteria usually used in systematic reviews would have excluded virtually all of the intervention studies included in this review. Instead this review chose a path that was arguably more difficult for appraising the interventions to be included in the review. Somewhat paradoxically, the inclusion of intervention studies that in the eyes of some should be excluded as valid evidence actually increased the complexity of the review and increased the opportunities to glean useful insights from what evidence was found. In addition, I chose to integrate the perspectives of immigrants themselves from qualitative studies and these studies did indeed contribute to critical understandings of how and why interventions worked (or not) for immigrants.

Separate systematic searches were carried out in this review for intervention studies and for views studies. These systematic searches across four public health databases resulted in eight sets of records that needed to be appraised for relevance and rigour. As I carried out this appraisal process I had a strong sense that there was a significant crossover and duplication between the search records for interventions and the search records for views studies retrieved from each database. I would strongly urge others undertaking a review of this kind to consider expanding the search terms and to carry out a single search on each database for intervention and views studies. The search records retrieved could then be progressively appraised for relevance and rigour by title, abstract and full report. As this appraisal process proceeded studies could then be categorised as either intervention or views studies and be appraised against the relevance and rigour criteria developed for each of these two kinds of studies. This could potentially reduce

'double-handling' of search records while not compromising on the comprehensiveness of the search strategies.

Related to this was the fact that appraising studies in a realist review that focuses on program mechanisms is a very time-consuming process because I often needed to review the full report to assess whether there were any fragments of evidence that might contribute to understanding the theorised intervention mechanisms. An additional difficulty in appraising the evidence, which is perhaps peculiar to this review, was that I often needed to access the full report to determine whether the study did in fact relate to immigrants and/or relate to immigrants from developing and middle-income countries. Studies frequently referred to 'ethnic minorities', 'racial minorities', 'Latinos', 'Africans' and 'Asians' and it was only after accessing the full report that I could assess whether these terms actually referred to immigrants. This peculiarity probably stems in large part from the lack of consistency in the language used around ethnicity and race across high-income countries. What might be called racial conflict in the USA is likely to be called ethnic conflict in countries of the former Yugoslavia.

Contextual information in terms of intervention participant characteristics or implementation environments is highly valued in a realist review of evidence as mechanisms may fire or misfire dependent on these contexts. [15] This review was able to retrieve information on the contexts of intervention participants, largely through the inclusion of views studies. The review was less able to attend to the implementation environments as this information was often not available in the studies and the span of high-income countries in which the intervention and views studies were carried out made it difficult to infer this contextual information. Future research may need to explore these implementation environments in more detail.

Finally, I would also suggest that a knowledge of the content area is essential when carrying out a realist review of this kind. I would suggest that the lead researcher either needs to know the 'territory' or have processes in place so that relevant experience is at hand to the research team throughout the review process. In the case of this review, while I have a professional background in the content area, I too benefited greatly from the input of others in the field at critical stages including in developing a research transfer document.

Overall, in my view, a realist review methodology was the most appropriate approach to the research question given the evidence that was available to contribute to the review and the need to generate insights into 'how' HIV prevention interventions with immigrants 'work'.

Chapter 10 Conclusion

The HIV/AIDS epidemic continues to expand, diversify and change even if the greatest burden of HIV/AIDS is still squarely situated in developing and middle-income countries in sub-Saharan Africa, parts of Asia and, more recently, the Carribbean. [1] Population mobility and migration appear to have been part of the global expansion of HIV from the early 1980s onwards by bringing populations with different background prevalence rates of HIV into closer proximity with each other. [18] Today, population mobility and migration is unprecedented in volume, speed and reach [56] and immigrants from developing and middle-income countries have emerged as significant populations in routine HIV surveillance in many high-income countries in Europe, North America and Oceania, including Australia. In Australia, this has resulted in immigrants being given a new and increased priority in HIV/AIDS strategic frameworks. [9] The vulnerabilities of immigrants living in high-income countries to the negative impacts of HIV/AIDS include social exclusion along with socioeconomic, cultural and language barriers to HIV prevention. [3 5] In high-income countries including Australia, HIV/AIDS prevention interventions for immigrants need to address these vulnerabilities in a context of accelerating mass movements of people to and from high-income countries in a globalised world.

HIV prevention interventions in high-income countries like Australia have generally included whole-of-population approaches and targeted approaches to sub-populations such as gay men, injecting drug users and sex workers. [11] Targeted approaches have been defined as interventions which take into account the shared characteristics of the members of a sub-population. [12] Immigrants comprise a highly heterogeneous aggregate of sub-populations and, while it is generally accepted that prevention interventions will be more effective if they are culturally appropriate to the population they serve, the strategies used to achieve cultural appropriateness vary widely and the underlying mechanisms of these strategies are rarely examined. [12] In Australia, a key gap in our evidence base includes what can be learned from other high-income countries to develop and implement new, or strengthen existing, approaches to culturally appropriate HIV prevention interventions with immigrants locally.

This research explored both targeted and culturally appropriate approaches in HIV prevention interventions with immigrants in high-income countries. In particular, the research examined the

intervention mechanisms (or theories) used to make them culturally appropriate in contexts similar to Australia. Thus the broad question which the research sought to answer was 'How and why interventions work (or not), for which groups of immigrants, and in what contexts?' – with the focus on primary and secondary HIV prevention interventions that operate at group or community levels. This broad 'how and why' research question has direct applicability to current public health policy and practice in Australia, in attempting to increase the understanding of ways to address HIV prevention at a time of increasing priority of the 'problem' of HIV/AIDS among immigrants.

This research, which took the form of a review of evidence, was guided primarily by a realist methodology [15] to answer this 'how and why' research question. Preliminary searches of the literature revealed that most HIV/AIDS interventions had adapted interventions for immigrant communities largely based on implicit theories for achieving cultural appropriateness. Consequently, the primary purpose of this review of evidence focused on making these theories explicit and then testing them to generate insights into whether they worked as predicted in achieving cultural appropriateness. Two types of studies contributed to the review of evidence: studies of interventions and qualitative studies of immigrants' views of HIV/AIDS prevention. In this way the review of evidence brought together 'expert' and 'lay' perspectives to the analysis and synthesis. The analysis and synthesis drew on theory-based methods of evaluation [136] and methods to combine different forms of research [124] in reviews of evidence within an overall realist methodology. [15]

The primary audience for this review of evidence is HIV/AIDS policy makers, researchers and practitioners in Australia. However, the findings of the review may have relevance to HIV/AIDS stakeholders in other high-income countries. A potential strength for the findings of this research to transfer into practice is the evidence that these audiences may be receptive to reviews of evidence that help to answer health promotion practice questions. [120 121 123 131] In addition, these audiences may be less concerned with the supposed hierarchy of evidence of primary studies, as long as the review makes the best use of the available evidence whatever its limitations. [117 123]

This research framed interventions as a series of implementation 'chains', each made up of an adaptation activity which generates an anticipated response and a potential resistance to the intervention from immigrants. [136] Intervening between the adaptation activity and anticipated

response by immigrants are the theorised mechanisms – the 'change elements' or program theories of the intervention. [136] The analysis of the literature mapped seven preliminary mechanisms – *'authenticity'*, *'understanding'*, *'consonance'*, *'specificity'*, *'embeddedness'*, *'endorsement'* and *'framing'* – contributing to cultural appropriateness in HIV prevention interventions with immigrants.

Systematic searches were carried out on major public health databases and Google Scholar to find relevant primary studies. After analysing the outcomes of these searches for relevance and rigour a total of 74 studies were included in the final analysis and synthesis. Most of the 34 intervention studies included in the review were implemented in the USA, with three in Israel and the Netherlands, and one each in Switzerland, Australia, Canada and New Zealand. The majority of the 40 qualitative studies included in the review were conducted in the USA, with eight studies carried out in the UK, seven in Australia, and one each in Sweden, Canada and Japan.

The seven theorised mechanisms – *'authenticity'*, *'understanding'*, *'consonance'*, *'specificity'*, *'embeddedness'*, *'endorsement'* and *'framing'* – generated from the literature were 'the lens' [15] to analyse the evidence from intervention and views studies to support or refute each theorised mechanism in HIV/AIDS prevention interventions with immigrants.

The strongest evidence across the studies reviewed supported the role of *'understanding'* and *'consonance'* mechanisms, indicating the pivotal role of using the language of immigrants – usually the 'mother tongue' – and incorporating elements of cultural values into the intervention content to develop appropriate HIV prevention interventions for immigrants. Key challenges in using these two mechanisms in 'real-world' interventions included the heterogeneity of immigrant community languages resulting in a need to prioritise the language(s) of the intervention and the challenges of finding common ground between 'old-country' and 'new-country' cultural values when adapting the intervention content.

Moderate evidence was found to support the role of three other mechanisms – *'authenticity'*, *'specificity'* and *'embeddedness'* – which indicated that staffing, targeting through ethnicity and settings were also critical elements in developing appropriate HIV interventions for immigrants. Matching the staff of the intervention to the immigrant target group could also assist in *'understanding'* and *'consonance'* mechanisms as bicultural staff were often bilingual and could

be used as "cultural insighters" [182] for developing the intervention content. The importance of targeting the intervention in terms of ethnicity was related to contexts where the immigrant populations were highly heterogeneous (e.g., African-born immigrants in the UK). There was evidence to suggest that ethnicity alone was insufficient to target interventions without also considering other key elements of identity such as gender and sexuality. The evidence to support the outreach of interventions to settings familiar to the target immigrant population was contingent on the target immigrant population(s) being ethnically or linguistically or racially stratified.

There was mixed evidence for the roles of the *'endorsement'* and *'framing'* mechanisms. The evidence from the intervention studies suggested that consulting with immigrant community leaders or communities or partnering with immigrant community institutions were largely not critical when developing and implementing appropriate HIV interventions. However, the evidence from the views studies suggested that the involvement of immigrant community leaders and institutions to gain support for interventions and participate in decision making and priority setting in planning could provide useful overarching support for HIV prevention interventions in an area of public health that is value-laden by the nature of the common routes of HIV transmission and commonly affected communities.

This review of evidence suggests that the pivotal mechanisms underpinning appropriate HIV prevention interventions for immigrants are language and cultural values. The staffing, targeting using ethnicity and use of settings as adaptation mechanisms in these interventions appear to be of less critical importance. Finally, the evidence suggests that immigrant community endorsement and partnering with immigrant community institutions encompass the least critical mechanisms when developing and implementing appropriate HIV prevention interventions for immigrants living in high-income countries. These theorised mechanisms should be seen as the key, rather than the only, mechanisms contributing to cultural appropriateness in HIV/AIDS interventions and the review found evidence that they were interrelated rather than mutually exclusive mechanisms of interventions. Further research is needed to examine the relationships between these seven mechanisms and any impacts they contribute to the effectiveness of interventions and HIV-related health outcomes among immigrants.

This review found that HIV/AIDS interventions with immigrants in high-income countries are relatively underdeveloped. The review has contributed to knowledge of the program theories or mechanisms which operate in these interventions which are at an early stage of policy development. [16] Thus to paraphrase Pawson et al [134] the progress made in this realist review of evidence is not from ignorance to answer, but from some knowledge to more knowledge, of the key mechanisms that contribute to culturally appropriate HIV/AIDS prevention interventions for immigrants. This knowledge can contribute to addressing the vulnerabilities and negative impacts of HIV/AIDS for immigrants from developing and middle-income countries living in high-income countries in a context of accelerating mass movements of people in a globalised world.

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Pangur Ban

This poem was written in the 8th or 9th century by an anonymous Irish monk who lived in a monastery on Lake Constance near the present-day border of Germany and Austria. During this period Irish monks were noted for their work in producing manuscripts of various kinds at monasteries all over Europe.

Pangur Bán

I and Pangur Bán my cat,
Tis a like task we are at:
Hunting mice is his delight,
Hunting words I sit all night.

Better far than praise of men
Tis to sit with book and pen;
Pangur bears me no ill will,
He too plies his simple skill.

Tis a merry thing to see
At our tasks how glad are we,
When at home we sit and find
Entertainment to our mind.

Oftentimes a mouse will stray
In the hero Pangur's way;
Oftentimes my keen thought set
Takes a meaning in its net.

'Gainst the wall he sets his eye
Full and fierce and sharp and sly;
'Gainst the wall of knowledge I
All my little wisdom try.

When a mouse darts from its den
O how glad is Pangur then!
O what gladness do I prove
When I solve the doubts I love!

So in peace our tasks we ply,
Pangur Bán, my cat, and I;
In our arts we find our bliss,
I have mine and he has his.

Practice every day has made
Pangur perfect in his trade;
I get wisdom day and night
Turning darkness into light.

And here it is in the original Irish language:

Pangur Bán

Messe ocus Pangur Bán,
cechtar nathar fria saindan:
bíth a menmasam fri seilgg,
mu memna céin im saincheirdd.

Caraimse fos (ferr cach clu)
oc mu lebran, leir ingnu;
ni foirmtech frimm Pangur Bán:
caraid cesin a maccdán.

O ru biam (scél cen scís)
innar tegdais, ar n-oendís,
taithiunn, dichrichide clius,
ni fris tarddam ar n-áthius.

Gnáth, huaraib, ar gressaib gal
glenaid luch inna línsam;
os mé, du-fuit im lín chéin
dliged ndoraid cu ndronchéill.

Fuachaidsem fri frega fál
a rosc, a nglése comlán;
fuachimm chein fri fegi fis
mu rosc reil, cesu imdis.

Faelidsem cu ndene dul
hi nglen luch inna gerchrub;
hi tucu cheist ndoraid ndil
os me chene am faelid.

Cia beimmi a-min nach ré
ni derban cách a chele:
maith la cechtar nár a dán;
subaigthius a óenurán.

He fesin as choimsid dáu
in muid du-ngni cach oenláu;
du thabairt doraid du glé
for mu mud cein am messe.

List of Appendices

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