Diabetes Literacy

A partnership approach to educating culturally and linguistically diverse people about the risks and prevention of type 2 diabetes

Stephen Black, Adult Basic Education, TAFE NSW-Northern Sydney Institute

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There are a number of people who enabled this project to work so successfully. First of all, of course, there were the participants in the various programs themselves, over sixty of them from various ethno-cultural backgrounds, including Afghan, Armenian, Chinese, and Iranian groups. They were enthusiastic participants, eager to learn about diabetes and the prevention of type 2 diabetes and to spread the word to others they knew.

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Executive Summary

This report is based on a project undertaken during 2007-8 with Australian Government (Department of Education, Employment and Workplace Relations) Innovative Adult Literacy funds. The project was undertaken as a partnership between an adult literacy provider, Meadowbank TAFE College in the Northern Sydney Institute and a health service provider, Health Promotion and Multicultural Health in the Northern Sydney Central Coast Area Health Service. An additional partner providing staff development and resources was Diabetes Australia NSW.

The concept of ‘diabetes literacy’ is relatively new and we defined it as, ‘The skills and competences to comprehend, evaluate and use information to make informed choices about the risks, prevention and management of diabetes.’ A series of six ‘diabetes literacy’ programs were undertaken in different local community sites in the Northern Sydney region. Each program targeted culturally and linguistically diverse (CALD) groups representing ethnic and cultural groups that generally report a higher prevalence of type 2 diabetes in Australia. The groups in this project involved mainly Afghan, Armenian, Chinese and Iranian background participants. Each program was jointly delivered over a seven week period (at 2 hours/week) by an adult literacy teacher and a qualified nutritionist/dietitian. The aims of the programs were twofold: firstly, to assess how health and adult literacy professionals could work together in partnership in the delivery of a diabetes literacy program; and secondly, to trial community-based diabetes literacy programs which targeted CALD groups. These programs were designed to educate local community CALD groups about diabetes and in particular about risk factors and how to prevent type 2 diabetes. Much of the focus in each program was on nutrition, diet and exercise as preventive measures. Some type 2 diabetes management issues did arise when it was realised several of the participants were already diagnosed with type 2 diabetes. The role of the adult literacy teachers was essentially to help provide the pedagogical conditions conducive to learning and to provide particular language and literacy support. The role of the dietitian was essentially to provide the content, the expertise in diabetes education.

The concept of adult literacy teachers team teaching with health professionals on a diabetes prevention program is new. In fact, partnerships of this type are rare in any health literacy initiatives in Australia. The literature review suggested there are current commonalities in the discourses of health and adult literacy, especially in relation to the push for partnership approaches to addressing social problems, community capacity building and the role of social capital. With the recent release of the Adult Literacy and Lifeskills Survey (ALLS, see Australian Bureau of Statistics 2007) which included Australia’s first national health literacy measures (published as Health literacy, Australia, Australian Bureau of Statistics 2008) the momentum appears to be gathering for the development of health literacy initiatives in Australia involving partnerships between the health and adult literacy sectors.

The rationale for this project was based on the enormous current health threat of type 2 diabetes in Australian society. Some overseas and mainly non-English speaking background populations report a higher prevalence of type 2 diabetes, including some Middle Eastern

\[1\] CALD groups are those people born overseas in countries where English is not the main language spoken or those people born in Australia whose main or preferred language is not spoken English (Thow & Waters 2005, p.2).
and Asian populations (Colagiuri, Thomas & Buckley 2008, Thow & Waters 2005). The literature also indicates that lower socio-economic status is associated with poorer health and reduced access to health information; included as factors are lack of formal education and poor English language and literacy skills (Australian Bureau of Statistics 2008). This current project addresses English language and literacy barriers within the context of learning about diabetes and the risks and prevention of type 2 diabetes, that is, the project utilised an ‘integrated’ concept of literacy and numeracy where these skills were taught primarily in the process of learning about diabetes.

In order to address the first aim, exploring how health and literacy professionals work together effectively in delivering a diabetes literacy program, action research methods were applied. The data for analysis were recorded and transcribed ‘reflection’ sessions with the presenters. Recorded and transcribed semi-structured interviews with the program participants provided the main data for addressing the second aim, assessing the effectiveness of community-based diabetes literacy programs which targeted CALD groups.

Overwhelmingly it was found that adult literacy teachers and dietitians team taught harmoniously, with good outcomes for participants and mutual benefits for the presenters. There were some slight misunderstandings as they initially sought to determine their respective roles but good communication and planning resulted in very successful partnerships. For three programs where participants had poor English skills, local community members undertook the role of interpreters.

The pedagogy was underpinned by a social capital approach which encouraged informality and a sense of belonging and trust among participants. This enabled participants to openly discuss the issues of most concern to them. Within this pedagogy, the content was to an extent negotiated as participants talked about their own specific diet and exercise needs. Some discussions focused on understanding food labels and this involved concepts such as serving and portion sizes and recommended daily intake. These were good examples of the concept of ‘integrated’ literacy and numeracy (and oracy) where participants were reading labels for a specific social purpose, and in the process they were developing their literacy and numeracy skills.

Interviews with participants and post-course evaluations suggested not only that the programs were successful in providing knowledge about diabetes and the risks and prevention of type 2 diabetes, but that the behaviour and lifestyle patterns of participants, especially in relation to diet and exercise had improved also. One of the key findings was that participants conveyed their new found knowledge to family and other community members not only locally but overseas. Thus the social networks of the participants enabled the programs to have an impact far beyond the classrooms in which the programs took place.

In conclusion, this project, whilst being small-scale and a pilot study, has a contribution to make on a number of fronts. Conceptually, it helps to put diabetes literacy on the map in both the health and adult literacy sectors. It also provides an intervention model in the fight against type 2 diabetes that appears effective at the local level, and quite possibly has a much wider impact when taking into account the social networks of the program participants. And finally, it indicates how the health and adult literacy sectors can work together effectively within an ‘integrated literacy’ concept, not only in diabetes education, but potentially in a wide range of other health related areas.
Context

An innovative project

This report is based on an innovative community project funded by the Department of Education, Employment and Workplace Relations (DEEWR) under its 2007 Adult Literacy National Project. The project can be considered innovative because it involved:

- trialling something new, a series of pilot ‘diabetes literacy’ programs representing a community-based approach to helping prevent type 2 diabetes
- collaborative arrangements between organisations who have not worked together closely in the field of adult literacy. These organisations included an Adult Basic Education section of the Northern Sydney Institute of TAFE and Health Promotion and Multicultural Health Services sections of the Northern Sydney Central Coast Area Health Service. A third ‘partner’, though not so directly involved in the delivery of the programs, was Diabetes Australia NSW
- team teaching between adult literacy specialists and qualified nutritionists/dietitians.

The project involved the trialling of six short diabetes literacy programs (of seven weeks each) which focused on educating culturally and linguistically diverse (CALD) groups about the risks and prevention of type 2 diabetes. These programs can be seen as a local response to what has been termed, a national diabetes ‘epidemic’ (Diabetes Australia NSW 2007). The programs were conducted over one year (from October 2007 to September 2008) and each program targeted different CALD groups in local community contexts. The target groups included CALD groups known to have a higher prevalence of type 2 diabetes, including some Asian and Middle Eastern groups. Each program was jointly delivered by an adult literacy teacher and a qualified nutritionist/dietitian. The focus of each program was on the prevention not the management of type 2 diabetes, and included an explanation of the types and nature of diabetes and the role of diet and exercise in helping to prevent type 2 diabetes. In the course of several of the programs it did emerge that some participants were already diagnosed with type 2 diabetes.

The programs were based on an ‘integrated’ concept of adult literacy (e.g. Bates & Wiltshire 2001, Black 1996, Foley 2002, McKenna & Fitzpatrick 2005, Wickert & McGuirk 2005). That is, the prime concern in the programs was the effective delivery of an important health message and literacy issues were highlighted and addressed primarily as a means of assisting participants to understand and act on the health message. Thus, they were not programs designed to improve literacy skills as such, except in the process of facilitating learning about diabetes prevention. The adult literacy teacher was there to minimise English language and literacy barriers to learning and to help provide the learning structures, the pedagogy, which best enabled participants to learn about diabetes. Health professionals are experts in health but not necessarily in adult pedagogy. There were few ‘health literacy’ models available on which to base the programs, and these programs therefore contribute to the development of such a model for future programs focused on either diabetes prevention or a number of other health related issues.
‘Diabetes literacy’: a new concept

There are relatively few references to ‘diabetes literacy’ in the literature and this project represents an initiative which develops the concept in both health and adult literacy discourses. As explained briefly above, this project aimed to educate local community CALD groups about the risks and prevention of type 2 diabetes. With each of the target groups, their English language and literacy proficiency was an issue of concern because it limited their access to information and the opportunity for dialogue, and therefore to maximise effectiveness the programs utilised the combined pedagogical skills of both health and adult literacy professionals. But the concept of ‘diabetes literacy’ applied here represents more than simply a combination of two professional fields. It is essentially about obtaining knowledge, of comprehending the nature of diabetes and the risks, prevention and management of the disease, and to do this requires various kinds of skills. Thus, drawing on a recent operational definition of health literacy (Zarcadoolas, Pleasant & Greer 2005), we define diabetes literacy as: ‘The skills and competences to comprehend, evaluate and use information to make informed choices about the risks, prevention and management of diabetes.’ We need to make the point, however, that in this project the primary focus was on the risks and prevention not the management of type 2 diabetes, though in fact it did transpire that quite a few of the participants were already diagnosed with type 2 diabetes and therefore some management aspects did feature in the programs.

Literature review

Literacy, health and ‘health literacy’

This project brings together adult literacy and health sectors in a ‘health literacy’ initiative. In Australia there are few health literacy initiatives to make reference to, and especially where literacy and health professionals have worked together. To date, health literacy in Australia has been a concept developed and promoted largely from within the health sector (e.g. Nutbeam et al. 1993, Nutbeam 1999, Green, Lo Bianco & Wyn 2007, Keleher & Haggar 2007), and most health literacy initiatives have focused on the strategy of rewriting health information to make it easier to understand. There has been some recent research analysing spoken interactions between hospital staff and patients in emergency departments (Slade et al. 2008), but beyond a few isolated studies and recent overviews of the potential for partnerships between health and literacy professionals (Black 2007, 2008), there has been little input from the adult literacy sector.

The situation in Australia is in sharp contrast to health literacy developments in the United States and Canada where the concept is well developed (e.g. Nielsen-Bohlman, Panzar & Kindig 2004, Rootman & Ronson 2005). In both of these countries there are also examples of strong links between the adult literacy and health sectors. In the United States, Rudd (2002) refers to these links as ‘a maturing partnership’ as the two sectors together attempt to ‘navigate’ the healthcare system (see also Anderson & Rudd 2006). Hohn (1998, 2002) similarly indicates some strong connections between the two sectors in relation to health literacy in Canada.

A possible catalyst for the development of health literacy initiatives in Australia is the recent first national health literacy survey (Australian Bureau of Statistics 2008) based on the Adult Literacy and Lifeskills Survey (ALLS, see Australian Bureau of Statistics 2007). This health literacy survey demonstrates the extent of poor health literacy in Australia and indicates those people with the poorest levels are generally older, lacking formal education, unemployed or their first language is not English.
Cross sectoral partnerships

In both the health and adult literacy sectors there is currently a push for partnerships as part of a world-wide trend to ‘linked-up’ or ‘whole-of-government’ approaches to address social policy problems and issues. In health promotion the push for such partnerships and alliances has been going on internationally for at least the past decade (e.g. Gillies 1998). This is due largely to the health sector’s shift beyond clinical and curative measures to the growing recognition of the broader social, economic and environmental determinants of health (e.g. Wilkinson & Marmot 2003, Keleher & Murphy 2004), and the subsequent realisation that addressing health issues requires crossing the boundaries of different policy sectors and breaking down previous ‘silo’ approaches to health.

The adult literacy sector by contrast is relatively new to the promotion of partnerships but in recent years cross sectoral partnerships, community capacity building and ‘integrated’ or ‘social practices’ understandings of literacy have been promoted strongly by the peak adult literacy professional organisation, the Australian Council for Adult Literacy (ACAL 2001) and in some recent national research reports (Balatti, Black & Falk forthcoming, Wickert & McGuirk 2005). Research by Figgis (2004) and Hartley and Horne (2006), however, indicates the paucity of current partnerships involving adult literacy and the health sector and these researchers suggest the potential benefits of such partnerships and some strategies to move forward in this direction.

The role of social capital

Linked to the push for partnerships and community capacity building is the concept of social capital which refers to social networks and the connections between people within or amongst groups (see Australian Bureau of Statistics 2004). There is increasing recognition that the socio-economic well being of individuals, groups and nations is dependant not just on the acquisition of technical skills (human capital) but also the networks, trust and shared values that comprise social capital (OECD 2001).

Social capital is increasingly seen to play a role in both health and adult literacy discourses. For example, at a very basic statistical level, the recent Australian health literacy survey (Australian Bureau of Statistics 2008) suggested that those who participate in groups and organisations, even as non-paid volunteers, achieve higher health literacy levels than those who do not participate. While there are some researchers who see the role of social capital in health as both complex and contested (e.g. Campbell 2001, Szreter & Woolcock 2004), nevertheless it is seen to offer a fruitful starting point and the space to examine the dynamics involved in the social determinants of health (e.g. Brough et al. 2007). In the adult literacy field there is also research indicating the social capital outcomes from adult literacy courses and how particular pedagogical strategies can produce these outcomes (Balatti, Black & Falk 2006, forthcoming).

Social capital features in this current project both in underpinning the approach to teaching about diabetes and how to prevent type 2 diabetes, and in explaining how the health messages are conveyed to others utilising the social networks of the participants.

Discourse commonalities

What this brief literature review indicates is that there would appear to be some commonalities in the values and concepts of both health and literacy discourse communities which augur well for a project involving professionals from both sectors working closely together. The literature indicates for example, that both sectors are focusing on ‘social’ understandings, including the social determinants of health and social practices concepts of...
literacy. Both sectors are also concerned to focus on community capacity intervention models, with a heavy focus on partnerships and individual and community development ('empowerment'). And finally, in recent years social capital has been seen to play a role in intervention programs in both sectors.

**Rationale for the project**

This project, a series of community-based interventions targeting CALD groups, was based largely on the prevalence of diabetes in Australian communities and in particular on the higher levels of type 2 diabetes among some CALD groups.

**Type 2 diabetes – its prevalence in Australia**

According to a recent Australian Government report, diabetes is one of the leading chronic diseases affecting Australians, with an estimated 700,000 (3.6% of the population) with diagnosed diabetes in 2004-05, with the great majority (92%) diagnosed with type 2 diabetes (Australian Institute of Health and Welfare 2008, p.viii). Further, the rate of increase in diagnosed diabetes has more than doubled between 1989-90 and 2004-05 (ibid) and this high rate of increase has led to dire predictions in the media of an epidemic of diabetes, with statements such as ‘2,000,000 by 2020’ (Fleming 2008). This situation is not confined to Australia; there is now global recognition of the burden of diabetes and the need to address it (World Health Organisation 2005). In the majority of cases of type 2 diabetes (up to 80%) this form of diabetes and its complications is considered preventable or can be delayed by healthy diet and increased physical activity (Colagiuri, Thomas & Buckley 2007, p.2, Diabetes Australia 2007). Some populations are more susceptible to diabetes than others, and in particular, Indigenous people with a prevalence rate estimated to be over three times that of non-Indigenous people (Australian Institute of Health and Welfare 2008, p.ix). Also experiencing higher rates of diabetes are people from lower socio-economic groups, people living in remote and very remote areas, and people born in overseas countries. The latter include those born in North Africa and the Middle East (7% prevalence rate each), South East Asia (6%), Southern and Eastern Europe and Oceanic countries (5% each). This compares with a prevalence rate of 3% for Australian born people (ibid, p.x). It is mainly those born overseas in non-English speaking countries who comprise the culturally and linguistically diverse (CALD) groups that are the main focus of this research report.

**Culturally and linguistically diverse populations and intervention programs**

The higher rate of the prevalence of diabetes among some overseas groups who fall within the CALD category has led to a number of recent national and state reports examining the relevant factors and intervention responses (e.g. Australian Centre for Diabetes Strategies 2005, Australian Institute of Health & Welfare 2003, Colagiuri, Thomas & Buckley 2007, Thow & Waters 2005). Indigenous Australians are often not included in the scope of these reports despite being a CALD group (Thow & Waters 2005, p.2).

Measures indicating the prevalence of diabetes among CALD groups and the factors which contribute to it are problematic, involving complex data and multiple sampling variables. There are different ways for example of measuring the extent of diabetes, including self reported data as found in the various health survey reports and clinical studies of measured blood glucose levels (e.g. Barr et al. 2005). Usually reports refer to standard prevalence ratios (SPRs), the ratio of the observed number of cases of diabetes (self reported or measured) to the number expected based on the Australian-born population (Australian Institute of Health & Welfare 2003, p.4). Most studies show a higher prevalence of diabetes.
among those people from particular regions including, as indicated above, the Middle East/North Africa, Southern Asia/South East Asia, Southern and Eastern Europe and Oceanic countries. Some countries are particularly well represented, including Singapore, Egypt, Lebanon, South Africa and Sri Lanka (Thow & Waters 2005, p.xi). Increasing age is also a risk factor for CALD populations (Colagiuri, Thomas & Buckley 2007, p.16). Identifying causal factors for variations in the prevalence of diabetes among people from different regions and countries is highly complex as shown by a report by the Australian Institute of Health & Welfare (2003, p.17) which states:

This could be explained by biological and genetic risk factors, such as a maternal inheritance mechanism; differing behavioural risk factors including changing lifestyle after migration; environmental risk factors such as some groups having a relatively low socio-economic status within Australia; or combinations of these, for example diabetes risk factors such as obesity and physical inactivity, are associated with low SES and lifestyles of increased urbanisation.

Levels of spoken and written English may also play a role and low levels of English language and literacy are included as socio-economic risk factors (Colagiuri, Thomas & Buckley 2007, p.19). The recent Australian Health Literacy Survey (Australian Bureau of Statistics 2008) indicated that people whose first language was not English performed at the lowest two health literacy levels on the five point scale of proficiency. The situation worsened with age with over 80% of the 55-64 year cohort falling in the lowest two levels (ibid, p.44-45). Also, those born overseas performed worse than those born in Australia and those not in the labour force or unemployeed performed worse than those in employment.

One recent study specifically analyses the issues involved in preventing type 2 diabetes in CALD populations in New South Wales (Colagiuri, Thomas & Buckley 2007). An extensive review of the literature indicates a number of features and trends which include the high number of CALD people in NSW, with one in five speaking a language other than English at home (ibid, p.6), and that for some CALD groups such as the Chinese, the rate of type 2 diabetes is increasing at a disproportionately high rate compared to non-Asians (ibid, p.8). People from other countries such as Afghanistan, Lebanon and Iraq are settling in NSW at a high rate and especially in some areas in Sydney’s west and south west. The prevalence of diabetes is also high among these emerging populations, more than double the rate for those born in Australia (ibid, p.9).

The range and mix of factors which may contribute to higher levels of risk among some CALD groups has been mentioned briefly above. The NSW study also draws attention to the lack of culturally specific knowledge by health professionals that affects access to health service across all cultures (ibid, p.19). Language and literacy barriers within some CALD group are also identified as a barrier to accessing services necessitating people to use friends and relatives as interpreters during consultations with health professionals (ibid).

After outlining a wide range of interventions in CALD communities the study concludes that successful interventions are those that are consultative, involving the target community; collaborative, using a range of partnerships; practical, in removing linguistic and socio-cultural barriers; and culturally appropriate, taking account of the characteristics of the target groups. These conclusions are largely in accord with the recent Australian Government report on ‘cultural competency in health’ (National Health and Medical Research Council 2006). From an organisational perspective, this report strongly promotes, among other factors: partnerships with community groups and other sectors, close community involvement in designing and implementing health promotion programs, the benefits of diversity and dialogue across cultures and the use of interpreters (ibid, p.34).
These factors resonate strongly with this current project with its strong focus on cross sectoral partnerships and local community involvement.

**CALD groups in the Northern Sydney and surrounding areas**

This project focused mainly on the Dundas/Eastwood/Ryde area to the west of Sydney. One program was also conducted at Hornsby to the north of Sydney. These areas fall within and on the boundaries of the local catchment areas of the two main partners to this project, the TAFE Institute and the area health service. These areas have experienced substantial growth in overseas born residents in the past decade or so. In Ryde, for example, overseas residents have increased 12.9% in the period 1991-2000 (City of Ryde 2004). Some ethnic groups are particularly well represented, such as the Chinese in Ryde where recent census data indicated 13% of the population speak a Chinese language at home (City of Ryde 2008, p.6). One local survey indicated approximately 37% of Chinese respondents stated their English proficiency was either poor or ‘not at all’ (ibid, p.13). A number of small and emerging communities such as those from Afghanistan and Iraq also feature in the Northern Sydney area and these communities are likely to have poor access to preventive health (Enchevarria 2002).

The rationale for undertaking this project therefore was based on: the extent and seriousness of the prevalence of type 2 diabetes generally in Australia, the potential for preventing or delaying this form of diabetes through intervention programs, the higher rate of type 2 diabetes among some CALD groups, and the concentrations of some of these CALD groups in the local catchment areas of the organisational partners planning to deliver the programs. Additionally, the nature of the intervention programs was based on successful community-based models for CALD groups within a framework of cultural competency. Linked in with these elements was the need to address English language and literacy barriers.

**Partnerships and local community networks**

Partnerships featured prominently and played a key role at all levels in this project. At a macro level, for example, it could be argued that this project represented a vertical partnership arrangement between the Commonwealth government which funded the project and the three organisations which contributed to the submission for funding. At the meso (middle) level, it involved a horizontal partnership arrangement between service providers which included the Adult Basic Education section within the Northern Sydney Institute, and Multicultural Health and Health Promotion within the Northern Sydney Central Coast Area Health Service. An additional partner was Diabetes Australia NSW whose main role was the professional development of adult literacy teachers and providing advice and resources for the six programs.

At each local community site where programs were delivered, further partnerships were necessary, drawing on the existing local community networks. Program 1 and 2 at Dundas targeting mainly Chinese residents required collaboration with the local Dundas Area Neighbourhood Centre for the planning of the program, use of their facilities and the use of their Chinese Community Development Officer as a translator. Program 3 which targeted Iranian participants required collaboration with the local Iranian community organisation at Hornsby. Program 4 targeted Armenian residents in North Ryde and required collaboration with the NSW Department of Housing in Ryde for use of their community hall, and with the North Ryde Community Aid and Information Centre where an Armenian Volunteer Visiting Coordinator recruited both the program participants and also an Armenian speaking interpreter. Program 5 was conducted at the TAFE College and involved a mixed nationality
group. In a sense the 'community' comprised the CALD community of students who were attending basic English literacy classes at Meadowbank TAFE College. Program 6 required collaboration with Relationships Australia, a large community-based, non-for-profit organisation providing relationship support to people. The target group for this program were Iranian and Afghan mothers.

At the micro level (the classroom interface between presenters and participants), partnerships were also integral to the whole project as adult literacy teachers and qualified nutritionists/dietitians, the diabetes content experts, worked together as team teachers. In two of the programs, interpreters played a key partnership role in the delivery of the programs.

**Project aims**

This project represented a fairly significant collaborative initiative for the two main organisational partners, the TAFE Institute and the area health service. While there was some cross-over in the sense that adult literacy teachers had previously taught health topics in the classroom and some health professionals had previously taught in VET contexts, it was nevertheless a new experience for both. In the literature there were very few local health literacy programs available as models to assist the presenters of health literacy programs. The first key aim of the project therefore was to assess how health and adult literacy professionals could work together in partnership in the delivery of a diabetes literacy program.

In view of the great need for initiatives to prevent type 2 diabetes and in particular among CALD groups, the second and broader aim of this project was to trial community-based diabetes literacy programs which targeted CALD groups.
Methodology

A qualitative approach

Primarily, this project adopted a qualitative research approach as it was seen to be the most appropriate approach for exploring and identifying the complexities and interrelationships involved in this undeveloped research area of diabetes literacy. The research comprised three components: firstly, an action research component involving the researcher, the adult literacy teachers and the health professionals in each program; secondly, semi-structured interviews with the participants in each program; and thirdly, a follow-up evaluation exercise undertaken mainly by telephone.

Action research

In order to address the first aim exploring how health and literacy professionals work together effectively in delivering a diabetes literacy program, action research methods were applied. The main ‘new’ element to be analysed was how adult literacy teachers and health professionals worked together as team teachers. Team teaching was new to all involved in the delivery of these health programs, though most of the adult literacy teachers had some experience of team teaching with fellow adult literacy teachers and with different vocational teachers in a vocational education and training context. Some of the health professionals had also co-presented on programs.

The action research comprised joint planning between the adult literacy teachers and health professionals prior to each session and a ‘reflections’ session at the conclusion of most sessions. It followed the established format of most action research studies – the spiralling process of planning, action, observation and reflection (e.g. Denscombe 1998, Kemmis & McTaggart 1988). Reflection sessions involved the researcher who provided some focus questions, and the two presenters of the program. These sessions were also tape recorded and later transcribed in full.

Semi-structured interviews with participants

At the conclusion of each program, the researcher, with the permission of the participants, interviewed each of the participants in the program. The intention was to learn what the participants thought of the program in order to help address the second aim of the project, which was to see how effective the community-based diabetes literacy programs were in educating them about the risks and prevention of type 2 diabetes. Participants were asked what they had learned from the program, and if or how the program had changed their behaviours, lifestyles or beliefs (see Appendix A). They were also asked if they had talked about or conveyed the information they had learnt from the course with anyone else.

Interviews typically lasted 15-20 minutes each. In cases where English language difficulties were evident a community translator was also present. Interviews were also occasionally conducted individually with the literacy teachers and health professionals. All interviews were later transcribed in full.

Follow-up evaluations

An evaluation sheet was designed, based on previous health promotion models, to indicate health behaviour change. It was completed with participants in the programs at least one month following the completion of the program. A community worker, and in three cases, a
community interpreter, undertook this role, usually by telephone. The questions were designed to be delivered fairly quickly, in approximately 10 minutes. Most questions were yes, no, don’t know, but there were also some questions which required a qualitative response (see Appendix B).

Six local community programs

Table 1 shows some details and basic demographic data of the participants in each of the six programs. From the outset the intention of the program organisers was to try to target those local communities and ethnic and cultural groups which, according to the health literature, were likely to have higher prevalence of type 2 diabetes. Hence, the main participants were people from Asia and the Middle East. Predominantly the participants in each program were female (92% overall), though only one of the programs specifically targeted women (program 6 for Afghan and Iranian women organised through Relationships Australia in West Ryde).

The program locations were selected largely due to pre-existing local community networks which could be tapped into for the programs. All programs except one were conducted in local community sites including a neighbourhood centre, church facilities and a public housing hall. The exception was the program conducted at Meadowbank TAFE College which comprised a mixed background group (mainly Chinese, Afghan and Korean). These participants were current students in adult basic education courses at the college, and could well be considered a distinct CALD ‘community’ within the local area.

The number of participants represents those who completed the program. In most programs there was some drop-out in participant numbers, which can be expected for any local community group. There were many reasons for this, often to do with people’s life circumstances and their personal health. Some participants were already diagnosed with type 2 diabetes and began the program with the expectation that the course would help them to manage their disease, when in fact, this was not the main focus of the programs. Some programs increased participant numbers as word of the program was spread in the local community.

The programs targeted specific groups of people in their local communities, and it was found that participants in most programs tended to be older people. In a Chinese group at Dundas and an Armenian group at North Ryde, some participants were in their 80s. However, an Iranian group at Hornsby and the last program, Afghan and Iranian mothers in West Ryde, were younger.

All participants were enrolled in a particularly flexible Language and Literacy course (course number 6518) accredited in TAFE NSW. This course is premised on participants working to achieve their own personal goals and was considered appropriate for this type of diabetes prevention program. Predominantly the participants were assessed by the adult literacy teachers as falling into level 1 and 2 in both spoken English and reading and writing according to the National Reporting System. Levels 1 and 2 are the lowest levels on the standardised five levels of competency of the National Reporting System used to assess and report on students in federal government sponsored literacy and numeracy programs. It would indicate, for example, that participants might be able to engage in short interpersonal exchanges in English, read the alphabet and short simple texts and possibly write about a familiar topic using simple sentence structure.
Table 1  ‘Diabetes Literacy’ programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>Demographic details and NRS levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of participants</td>
</tr>
<tr>
<td>Program 1 at Dundas. Chinese students</td>
<td>9</td>
</tr>
<tr>
<td>Program 2 at Dundas. Mainly Chinese (7) students (also Russian &amp; Italian)</td>
<td>9</td>
</tr>
<tr>
<td>Program 3 at Hornsby. Iranian students</td>
<td>8</td>
</tr>
<tr>
<td>Program 4 at North Ryde. Armenian students</td>
<td>11</td>
</tr>
<tr>
<td>Program 5 at Meadowbank. Mainly Chinese, Korean &amp; Afghan students</td>
<td>16</td>
</tr>
<tr>
<td>Program 6 at West Ryde. Afghan and Iranian students</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: The number of participants represents those who completed the program

The elements of each intervention program

Each program varied slightly according to the circumstances and the needs of each group. The two presenters worked together to determine the exact content of each program. No one program was conducted in the same way and with the same content. Seven weeks (one two-hour session each week) was considered the optimum length of time for each program. For most programs the structure was as follows:

Weeks 1 & 2: Introduction, getting to know participant needs, enrolment in the LLN course, introduction to what is diabetes – the differences between the types of diabetes and how diabetes affects people.

Weeks 3 & 4: A focus on diet - discussions over food types, food labels, nutrition and the food and diet of the participants in the course. A pictorial resource produced by Diabetes Australia NSW (Diabetes: Making healthy food choices) was supplied to each participant. In some programs a trip to the supermarket was undertaken.

Weeks 5 & 6: A focus on exercise. Pedometers were supplied to every participant. In some programs there was a group activity (Tai Chi for example, and a short walking tour in the community). One program organised an exercise class conducted by the local Healthy Lifestyle.

Week 7: A relaxed final session with general discussions, recaps on the essential messages, details provided of diabetes treatment referral services in the area, and a communal lunch provided by the participants.
Findings

Adult literacy teachers and health professionals working together

Introduction

The findings presented in this section are based largely on transcript data from the action research 'reflections' involving the health and literacy presenters and the researcher. Also included are extracts from transcriptions of interviews conducted separately with one or both of the presenters of the programs. The intention is to address the first aim of the project which is to assess how health and adult literacy professionals can work together in partnership in the management and delivery of a diabetes literacy program.

Implementing an 'integrated' concept of literacy

'Integrated' literacy is a well known concept in vocational education and training but there are often misunderstandings over what it involves, and several presenters (both health and literacy) initially had to work through the concept before gaining a better understanding of how it might work effectively. As explained earlier, these programs were essentially about health messages and in particular about preventing type 2 diabetes. They were not classes designed to improve literacy skills as such, except in the process of facilitating learning about diabetes prevention. The adult literacy teacher was there to minimise English language and literacy barriers to learning and to help provide the learning structures, the pedagogy which best enables participants to learn. At times however, this message became a little confusing.

In the majority of the programs this was not an issue of concern because it was clear that participants were attending primarily to learn about type 2 diabetes prevention. However, in two of the programs there was potential for confusion because they involved converting existing adult literacy classes to diabetes prevention classes for the period of the program (7 weeks). The rationale for doing this was sound. For example, in one local neighbourhood centre a group of mainly Chinese students were attending an off-campus adult literacy program. These students met all the criteria for a targeted type 2 diabetes prevention program – they were CALD background, members of a higher risk group, and they were likely to have English language and literacy barriers to accessing health information. However, the health professional on this program did comment at one stage, “well, I don’t want to take over because the aim is also literacy”. This wasn’t entirely accurate, and the point to be made here is that it is potentially problematic to re-label an adult literacy class as a ‘diabetes prevention’ program and to expect all participants and presenters to focus exclusively on health. Starting a completely new type 2 diabetes prevention program in a local community context, however, presented less opportunity for ambiguity. As the literacy teacher on another program targeting Chinese residents stated:

We use a lot of English and they get the key words, (but) it's not, from an English teacher point of view, it's not giving grammar and everything, it's just the key words, like carbohydrate, Glycemic index ... insulin, all these kind of key words ... or like the GI symbols, they know what to look for ...
Determining roles

It was to be expected that there would be some difficulties to overcome with two professionals, unknown to each other prior to the program and from different professional areas, team teaching on a seven-week program. In two programs the same health/literacy ‘partners’ were able to double-up, having worked together in a previous program. In both their ‘second’ programs the health and literacy presenters felt much more confident and comfortable team teaching with someone they knew.

As the programs were primarily about diabetes, in most programs the health ‘expert’ led the program by presenting the ‘content’, the diabetes prevention knowledge, and the literacy teacher provided a secondary, supporting role. However, this was not necessarily the case with all programs. For example, in one of the early programs it was clear that the health and literacy presenters considered they had equal though different roles and they were sufficiently confident and relaxed enough in their roles to “just jump up and interchange” as the need arose in the sessions. As the dietitian (D) explained, they worked together in a cooperative, equal fashion:

Yes, well I think we worked very well together, because often we would find one of us was standing up talking or doing something on the whiteboard and suddenly the class would be trying to say a word and I wouldn’t know how to instruct them through that, so I would deflect to L (literacy teacher) who would then take over or jump up and do a diagram ... and she would do the same when she was revising something with them and a content question would come up, either she would answer it and look to me for confirmation or she would throw it over to me, so within our own group we did stick to our content areas ...

The literacy teacher in the above partnership stated:

I think I probably lead the structure of the class and D (dietitian) puts the content, and then I do activities, say, with D's content, so she's like the knowledge, and I kind of structure the class and do the activities like I would normally in an everyday classroom

In another program, the adult literacy teacher knew the participants very well, having taught them literacy skills for part of the year. This teacher was also knowledgeable about diabetes through her own family history and through personal interest. In these circumstances, she took a more dominant role in the partnership. In a following program, however, the team teaching dynamics were different as the same health professional worked with another literacy teacher who was new to the area of diabetes, and in this program the health professional took the lead role, providing the content knowledge, and the literacy teacher provided a largely supportive role. This team teaching approach mirrors the support provided in some vocational education and training contexts as literacy teachers work together with vocational subject experts (see Bates & Wiltshire 2001, Black 1996, Foley 2002).

Professional boundaries

The health professionals who included practicing dietitians, were the experts in diabetes knowledge. The adult literacy teachers were the experts in pedagogy, in structuring classroom conditions to assist learning. At times, however, individual health and literacy professionals either went beyond their specific areas of expertise, or fell short of what was expected. These were the inevitable minor tensions as two professionals were required to work together so closely. In one program, for example, the adult literacy teacher, with some diabetes knowledge background, was perceived by the health professional to be too prescriptive in providing diet advice to the participants. In another program, the adult
literacy teacher provided some health advice to participants which was incorrect, and the dietitian informed her of this in an email before their next session. On the other hand, from the adult literacy perspective, one teacher expressed the view that her co-presenting health professional sometimes spoke too fast and delivered information inappropriately, covering too many concepts in one go to participants who were unable to comprehend sufficiently. These were minor issues, easily overcome, but which demonstrated the awareness of professional boundaries and a natural sensitivity on the part of presenters to reflect and protect their areas of expertise.

The following dialogue between the researcher (R), a dietitian (D) and her co-presenter, the literacy teacher (L) is a demonstration of how both professionals perceived they had different roles and areas of focus which, in combination, led to improved health benefits for participants:

(R) Well, that's the other thing, when they do go and consult a doctor ... they know the questions to ask, they already have a grounding (as the result of this course)

(D) That's what I'd like to, I mean, (my) personal role that I have is that they will leave this with an increased awareness of the issues around diabetes, eating, exercise, care of the feet, and where to go for more help, and to be a bit more empowered in asking their doctor

(L) And they know what these words mean, they know concepts, what insulin is and what it does

(D) Take more control over their own health

(L) And they've already got that schema before they go in there ..., they know the words.

There was also some carry-over of skills from one professional area to another. Literacy teachers quickly gained some knowledge about diabetes and how to prevent type 2 diabetes, though it wasn't always easy, especially if they started the program being unfamiliar with diabetes knowledge. One dietitian commented:

I think it was really difficult for L (literacy teacher) to come up with literacy worksheets with a limited understanding of diabetes and a wealth of resources on the net, some of which aren't what we use in Australia. So I think she did a fantastic job but it was really challenging for her.

Health professionals similarly picked up on elements of literacy teaching techniques. For example, one literacy teacher commented about her co-presenter, "she's copying me a lot more, because, obviously, being a literacy teacher you get so used to the gestures". In another program the dietitian was very keen to learn new pedagogical techniques, "...the whole aspect of using the worksheets is a way to get them to do things in a written way and that's what I then needed guidance on, because I wasn't aware of any of that."

**Planning and communicating**

The key to effective team teaching was the planning and the communication between co-presenters that went on before the program started and between sessions during the program. In most programs the two presenters communicated via email prior to the sessions. The literacy teacher in one program explained:

... normally D emails me at the beginning of the week just like, the topics she'd like to cover, the main points she wants to get across, and I think about it from a literacy point of view, how can we do that, and plan the lesson as if I'm doing a class ...
The co-presenting dietitian on this program similarly explained:

... very quickly we got into a setting where she would email before the group and we'd meet on the day before the group and she'd say these are the things I pulled off the net, I tried to get them from Australian sites, do you think they're appropriate?

It was this thorough planning that enabled these two presenters to work so well together in the classroom right from the very first session. The dietitian explained:

Our resources complemented each other. I had these pictorial resources I got from Diabetes Australia on risk, and they fitted perfectly with the worksheets, well I guess that's because we had communicated about what we wanted ...

In one of the programs where the co-presenters didn't communicate very effectively from the beginning, there were some initial problems and the first session lacked coordination as the literacy teacher explained:

I was a bit surprised because when she turned up, she said sort of, now, do you want to get started now?... And I was surprised because I presumed that she was going to be leading it and giving the information. So I actually didn't quite know where, I didn't start, so I have to speak with her again about that...

In this program the situation was quickly resolved before the following session and henceforth there was regular communication between both presenters by phone and email, prompting the literacy teacher to later state, “It felt more comfortable and she said that too ... I feel like we've got bit more of a game-plan ...”

Language issues, interpreters

In three of the six programs interpreters played a role, but these were not qualified and experienced interpreters, rather, they were bi-lingual community members who were happy to take on an interpreting role. These three programs included a mainly older Chinese group, a mainly older Armenian group and a group of much younger Afghan and Iranian mothers. In each of these groups as the interpreter was at the same time one of the community members, she personally knew most of the participants. The other three programs where no interpreters were required included two programs in which groups were formed from existing adult literacy classes, and an Iranian group where participants were sufficiently competent in spoken English.

The interpreter was an extra element in the class dynamics but in all three programs where they were involved, their role was very positive and integral to the success of the programs. The literacy teacher in one program was concerned initially that the sessions would be interpreted too much, an almost word-for-word account, but in fact the interpreter almost seamlessly incorporated her role, clarifying what the dietitian was explaining, and giving time to see what the responses were from the participants. As sessions progressed in some cases less interpretation was needed, as a literacy teacher explained:

Things are in English, and S (Interpreter) actually was less, less of a translator role, and they didn't look so much to her this time. She clarified what proteins were, what carbohydrates were, just to make sure they completely understood.

The dietitian similarly explained that it was mainly when dealing with more complex concepts that she would, “look at S and say ‘do you want to translate that?’ give her a moment to translate”.

16
As their confidence grew the interpreters were able to have some input into how the health messages were conveyed in the sessions, as another health presenter explained, "... she told me to just make sure that you give the information in chunks and not too much in one go ...”

**A collaborative pedagogy**

For the literacy teachers the programs were another variation on what they do, professionally, but for the health professionals teaching a group of CALD students about health over an extended period of some weeks (seven), it was different to their regular professional role. However, having said that, one dietitian had taught previously at TAFE and another worked as a diabetes educator in a major Sydney hospital, and all health professionals were familiar working with CALD groups.

**A non-formal educational environment**

All the programs were conducted in an informal, relaxed, interactive manner. No one wanted the ‘lecture-style’ format that might typically be adopted in conveying health information to community groups in short, one-off sessions. The local community contexts encouraged informality with sessions being taught in neighbourhood centres, church halls and public housing meeting rooms. Every program except one college-based program involved participants seated around one central table. Facilities were often sparse with a mobile white board being transported to two centres that didn’t have teaching facilities. In one program targeting Chinese residents in a neighbourhood centre, other Chinese people were in the same centre playing mahjong and ping pong and doing Chinese brush painting. As an indication of informality and the community feel of these programs, the literacy teacher commented that at morning coffee time her students, “... have a chat with the people in there and say what they’re been doing, and then we get people wandering past the door and having a nose in here”.

In a program targeting Afghan and Iranian mothers, their young children played close by and interacted with them in the class. Some groups comprised mainly older participants with some Chinese and Armenians in their respective programs being in their 80s, but some of their peers in the class were quite young. In one program, a grandmother, daughter and grand daughter were all involved in sessions for a short time and intergenerational factors of some kind were at play in most of the programs. The formal education levels of participants varied also, with some having university qualifications while others were illiterate in their own first language. No attempt was made to screen participants; all were welcomed, except that participants had to be reminded that the purpose of the course was the prevention of type 2 diabetes, not the management. One wheelchair participant in a session was really seeking the latter and she discontinued with the program. One older Chinese man in a program was blind.

**Adult teaching principles – a social capital approach**

As the teachers were all experienced adult literacy teachers, all the programs involved a similar pedagogical approach or philosophy. Interestingly, there was no hint of dissonance from the health professionals who were in full accord with the pedagogical approach taken, suggesting the two professional fields share similar philosophies in relation to pedagogy.

Recent adult literacy research has demonstrated how particular teaching strategies result in social capital outcomes (Balatti, Black & Falk 2006, forthcoming). Many of these strategies resonate with adult learning/teaching principles generally, and this research has relevance for the discussions in this section. While conveying key diabetes knowledge was the central focus of these programs, it was undertaken in a way that also encouraged the social capital concepts of bonding, bridging and linking ties.
Bonding ties are the strong ties that build cohesion and common purpose within the learning group. There were many ways that bonding was encouraged within the programs, and in particular it involved building trust which requires "encouraging people to get to know one another and creating a non-judgmental climate in which people feel safe to share life experiences and to make errors as they are learning" (Balatti, Black & Falk forthcoming).

One literacy teacher said she and the dietitian deliberately sat down with the participants in the sessions rather than stand up, "so we didn't have that type of us and them kind of thing, so we were all on eye contact." Activities in the sessions were also as non-threatening as possible. For example, rather than ask if any participants had type 2 diabetes, participants were asked if they had or knew of any family members with the disease. Participants also did group activities based on their diet rather than itemise their personal food items over a set period, which might have been confronting or embarrassing to some participants. The community interpreters were also very helpful as mediators in reducing the social distance between presenters and participants.

To nurture a sense of belonging, sessions included a lot of group discussion and working in pairs and participants were encouraged to share their viewpoints and their life experiences. Group cohesion was assisted by the health professionals accommodating the expressed needs of individual participants even when they weren't directly related to diabetes prevention. For example, one Chinese woman wanted to know about osteoporosis, and another man with diagnosed type 2 diabetes who brought his own glucose readings along for the dietitian to advise him on.

The exercise component of one program encouraged group cohesion. The Tai Chi video which the presenters showed to the group, while useful, was soon abandoned as the older Chinese participants demonstrated to the presenters their own local form of Tai Chi. The session was, in the words of the teacher, "very physical and together, really connecting ..." This session seemed to encourage a focus within the group on other forms of dance in follow-up sessions, furthering bonding between participants and the presenters:

... and they would all laugh, and then the other one would get them to show them some kind of dance ... and they are showing each other different dance moves and things this week, I've kind of noticed that, social aspects of them ... it was very nice, but it was a very role reversal, they were showing us what to do ... But it was really lovely, and they were loving it, and I was getting my right and left wrong all the time ...

Evidence of increased bonding and trust in the group which resulted from the pedagogical approaches was provided in one Chinese group with participants increasingly admitting to having type 2 diabetes. This may be particularly relevant because there is evidence in the literature that some ethnic groups, including the Chinese, feel stigmatised by acknowledging their diabetes condition (Colagiuri, Thomas & Buckley 2007, p.22). And yet, as sessions progressed and participants felt more at ease in their group, they were asking specific questions relating to their own condition, including bringing along their own medical records to discuss with the dietitian. As the dietitian noted, "I think in the first week or so I was aware that one person actually had type 2 diabetes. By the end there were still people coming out of the woodwork".

Bridging ties are links between groups of people who are different, enabling participants to become members of new 'outside' networks. There were instances, for example, of the presenters trying to encourage participants to join walking groups or a local gym or swimming club or dancing group in order to increase levels of physical activity as a type 2 diabetes preventive measure. Some participants were encouraged to get involved in a community garden project in one local area and short, local excursions (where possible) were a feature of each program.
Linking ties are those links to institutions which, in the case of these programs, were largely health institutions. The dietitians in particular were concerned to refer participants to the specialised services available close by, as one dietitian commented when planning a session:

I might talk to the dietitian in charge at Ryde and find out what their referral system is, and maybe also Parramatta hospital. I might find out about the two local diabetes services and we might give them the contact details, so that they can get some more specialised help ...

Participatory content

So far the focus has been mainly on how the programs were delivered, the pedagogy, with an emphasis on social capital concepts. This section briefly covers some of the content issues in the programs with a greater emphasis on the knowledge and 'skills' acquired in the programs. It needs to be stressed however, that each of the eight programs varied in what was taught partly due to presenter preferences, but mainly because the participant groups differed so much in their abilities and needs. As we explained earlier, age groups between and within programs varied as did education levels. Clearly, the level and the nature of the content delivered in the programs differed to accommodate different participant needs. But even within each program, what was taught depended largely on what the participants wanted and needed to learn. While the presenters had a clear framework of what they wanted to cover week by week in the sessions (briefly outlined earlier on page 12), the finer detail was in a sense negotiated with participants. The presenters were aware of the need to teach about the nature of diabetes and then to focus on diet and exercise as preventive strategies. This was undertaken not in a 'banking' form, that is, depositing knowledge as Paulo Freire has explained. Rather, it was negotiated, it involved the full participation of the group. One dietitian helped to explain her approach by stating that her professional role was not to be a "gatekeeper of nutrition" but rather to develop people’s capacity to make healthy lifestyle choices.

The important point with all of the content was to relate it to the specific needs of the participant groups, and therefore much effort went into pedagogical exercises designed to elicit information about what types of food people ate, and the types of exercise they did or were capable of doing. One dietitian, for example, stated:

(What) I'd like to do is get a feel for the foods they do eat, but do it as a group thing, what foods do you like for breakfast? That way I'll get a feel for the foods they like and then we can talk about best choices for diabetes out of that ... And then I used their range of foods and opened up on the whiteboard to then say ok, when you eat bread, if it's white bread it does this, when it's brown bread it does this, when you eat fruit it's low GI, so that's ... I think that worked quite well, drawing out their food choices.

It also meant being realistic and practical. There was little point, for example, in trying to get a group to change their rice preferences if there were strong cultural factors operating against such changes. Similarly, in trying to encourage the purchase of certain types of foods if these were too expensive for the participants to buy. One dietitian, for example, explained the situation for her Chinese participants regarding more expensive low GI (Glycemic Index) food:

The only thing I am worried about is a lot of those low GI foods are more expensive, so, I think what we tried to get across at the end was that although these are very good choices, if you want to eat your ordinary rice, that's ok, just have a small serve and lots of veggies. So, those who want to buy any other style of rice and bread and have the money to do so can, those who can’t or don’t want to can hopefully just learn to have smaller serves.
This dietitian continually reinforced this idea of key messages. Ideally, for example, participants were told five serves of vegetables should be eaten daily, but this wasn't always practical, so at least try to eat more vegetables and less rice.

Understanding food labels was a feature of most of the programs as few participants understood the nutritional content of the food they purchased. Concepts such as serving and portion sizes, recommended daily intake and sugar and sodium levels were discussed and specific numeracy and literacy aspects were taught explicitly. These were examples of the true meaning of 'integrated' literacy and numeracy (and oracy) where participants were ‘reading labels’ for a specific social purpose, and in the process they were developing their specific literacy and numeracy skills.

Some quite basic, taken-for-granted concepts were found to be problematic, such as the concept of ‘a piece of fruit’. As the dietitian explained, “we talk about a piece of fruit being a whole piece of fruit, and their concept of piece was a bit cut off, so they were saying are you talking about a whole one or a piece?” This can be seen as an example of the presenters teaching the language of numeracy in an integrated manner.

In most programs the presenters brought in food packets, boxes and labels for discussion, though information often had to be simplified for some groups because the information was too complex to be understood. One Iranian group particularly enjoyed their food labelling exercises with the literacy teacher stating:

... they all had lots of questions to ask today too, there were lots of questions about the labels... I think they got a lot out of the number of ingredients and how the more processed food has the more ingredients on it.

One group went on an excursion to a supermarket as an extension of their work on food labels which was very successful as the health professional indicated:

It was really good, we had a full house, a lot were asking questions particularly the ones with young children, baby food and they were quite surprised to find how high the sodium was in baby food ... We did reading labels before, we did two weeks of that, we looked at fats, sodium and looked at other things with added calcium ...

Most programs included a session on assessing one's risk factors, which included calculating their BMI (Body Mass Index), and participants were supplied with tape measures to make this calculation. In one program the biggest surprise for one presenter was that she was at high risk herself.

Increasing physical activity was a feature of all programs, and every participant was supplied with a pedometer to encourage more activity and lots of discussion over the desired 10,000 steps each day. The activity/exercise aspect of the programs varied according to the needs and abilities of the participants. An elderly Chinese group went on a walk in the neighbourhood to a community garden and had a session on Tai Chi which we briefly explained earlier (page 18), as the participants took the initiative and demonstrated their version of Tai Chi to the presenters. For one older group, a visiting fitness instructor took them for a session of basic exercises, and another group went on a modified bush walk round the suburb.
The effectiveness of community-based diabetes literacy programs

This section focuses on addressing the second main aim of the project, which was to trial and therefore assess the value of community-based diabetes literacy programs in educating CALD groups about the risks of type 2 diabetes and how to help prevent it. The data presented in this section are largely anecdotal and drawn from both the reflections and interviews with the presenters of the programs and interviews with participants conducted at the conclusion of the programs.

Knowledge about diabetes and the risks and prevention of type 2 diabetes

Given that the target groups in the programs were from CALD backgrounds with a higher prevalence of type 2 diabetes, and given also that some of these groups comprised older participants, it should hardly be surprising to discover that some of the participants had been diagnosed with type 2 diabetes or that they knew someone close to them who had been. In which case, it was to be expected that some participants would already have some knowledge about diabetes. But one of the surprises in these findings was that participants, even when type 2 diabetes was personally close to them, had surprisingly limited knowledge about the condition. At times the distinction between knowledge relating to the prevention of type 2 diabetes overlapped with the management of type 2 diabetes. Typically, one Iranian participant stated, "... because my husband has diabetes, and he just try for the healthy food and I come for more information. Fortunately this course has been very good for us." In quite a few other cases, it was equally clear the participants in the program were there at least partly in order to learn more so they could help their spouse or other relatives. One participant stated:

I'm interested for this course because in family, my mother's side, my Mum, my grandpa, my uncle, all diabetes ... my Mum eyes, my auntie eyes ... They live in Iran.

Another Iranian participant said her husband's blood glucose was high, "ten point something, and now (inaudible) have a teacher when you sit there for the healthy food, he's now 4.5. He was happy."

Individual comments from participants on their new found knowledge about diabetes and the risk and prevention of type 2 diabetes are too numerous to account for, but below are just some of the typical participant responses:

➢ "Before I was seen the label says energy and other stuff, I didn't know what's that mean. But now I know what that means per serve, per hundred, and how much is good and how much energy or fat, I can read the label now." (Iranian participant)

➢ "Now I understand about this, now I understand about GI, that is good ... sometimes I read in shopping centre about low GI ... and exercise, but mostly I am so happy for this (recommended servings for children) ... and my daughter (22 years) is so big, is fat ... I speak to her and I give this picture, and I put another like this on my fridge ... when my son goes to the kitchen, all vegetables." (Iranian participant)

➢ The Chinese interpreter speaking on behalf of a participant stated: "she says that overseas China at that time she just learned that if people got diabetes they couldn't eat too much, different kind of things, just being (inaudible) or vegetables, but right now after she attended this course, she learned actually things they cannot eat, like how many meals, what kind of serves, vegetables ..." Interpreting for other Chinese participants in a small focus group, the
The interpreter stated further: "They said that they teach more, very more detail, like the GI index, now they learn what kind of products they can buy in the supermarket ... the GI ... Before they just learned that with a picture (inaudible) ... Another member said that um, before she just learned that white bread is good for them, but this time after learning they learn that other bread ... Even the rice, different kind, what kind of rice they can take ... Before she just learned that a, people if they got diabetes it's no good, but right now she learn more like diabetes will cause the eyes problem, leg problem, heart problem ..."

The presenters themselves also had positive feedback from participants. A dietitian commented:

... that gentleman with diabetes ... told me he had learnt more from this than going to the hospital he was sent to with diabetes, and only because the information he got was in English, and as you say this has been a slower pace, and I'm sure whoever he saw did a good job, but probably had one hour and, yeah, and he actually came this week with some (inaudible) glucose readings for me to look at, to explain why he goes to bed on a reading and wakes up high, he didn't understand that ...

Other participants who had been diagnosed with type 2 diabetes and their spouses also felt they had been given inadequate advice from their doctors. An Armenian man was now eating lots of different vegetables each day. He stated via the interpreter, "I learn everything from here ...... the doctor is just a normal GP, he's not a specialist, a Persian doctor, he speaks Farsi." His wife, also a participant in the program, said he was just taking the tablets, "he had no idea about the diet." A Chinese participant was told by her doctor to drink red wine each night for its health benefits, but this woman, a non-drinker, was unaware until she attended this program that "green tea and lots of veggies will give you the same thing" (i.e. provide anti-oxidants), and that this might be a preferable option for her.

**Behavioural and lifestyle changes**

It was one thing for people to state they thought they had gained knowledge about diabetes, but changed behaviour to prevent type 2 diabetes was the overall health aim. This section illustrates how the health messages about diabetes seemed to have resulted in a changed lifestyle/behaviour for at least some of the participants.

One Iranian participant commented following her husband's twice yearly check up for his diabetes condition, "The doctor said that's very good because you have controlled the food. The food is important ... he said to me to say hello to the teacher, thank them for more information (laughs)." Other participants commented that their husbands and family members have now restricted their high consumption of bread. One said, "he always eat six or seven bread, and now just one piece", and another participant commented, "before everyday cook rice, now no, only four days, sometimes three days". There were also quite a few references to reduced family intake of chocolate and chips. As many of the participants were at the same time, the main purchaser and providers of food in their families, they were in an ideal position to put into effect what they had learnt, even if it wasn't always popular with the family members.

The Chinese groups seemed to have taken on board the key messages about vegetable, fruit and rice intakes. Comments included:

- Oh, only just have a couple of vegetables a day, certain kind of vegetables, but now I take at least three or four, not five, not yet ... change my diet for sure

- Every meal we do not eat too much rice ... eat more vegetables and fruits ... more fruits than before, more vegetables than before
Before we always eat white bread but now we like wholemeal bread because it’s good for our health

Before we always eat the mince meat, the pork meat ... Now we change. Eat more vegetable ... orange juice, don’t drink too much ...

Other participants in these groups commented that when they go shopping, they now purchase goods with a greater awareness of sugar and sodium content. For the Chinese groups, however, choice of rice was a major issue, and while they had become knowledgeable about the health benefits of lower GI rice, some cultural practices came into play also. One participant commented that her customary jasmine rice was “beautiful” though in future she said “... I may have a little bit of brown rice mixed up.” Another Chinese participant said she would change her rice to a lower GI rice but only when her current stores of rice were finished, and this could take a while because she buys rice in twenty kilogram bags.

The dietitian who worked with one of the Chinese groups provided some direct evidence of behavioural changes and how she attempted to get some key health messages across to participants:

... one of the ladies said she’s lost a couple of kilos, because she’s been eating more veggies, and she was really happy ... And we asked them, what was the key message, and they all said, ‘eat more vegetables’. As a nutritionist, if that’s the one message we got across that has health implications across a range of things ... as a health prevention message, I feel we got that across, plus I think we had some health literacy gains in terms of those who did have diabetes having a better understanding of how they can help themselves, empowering them to ask their doctors the right questions

**Spreading the health messages to others**

It became apparent as the programs progressed and the views of the participants were obtained in interviews that these programs were reaching an audience far beyond those who turned up in the sessions. The Chinese interpreter for example said of Chinese participants in her group, “... the social group, they always transfer their healthy food information, exercise information, yeah, always ...”

This social capital element – connections with other networks in spreading knowledge about diabetes prevention, is a key finding in this overall project. Participants rarely live in isolation but in social networks which involve their immediate family and their own communities. Health messages, especially those as significant as preventing type 2 diabetes, are considered vitally important and participants often felt it was their duty to inform everyone they knew, and especially close family.

The health and literacy presenters also, as the programs progressed, specifically promoted the idea that the information they were providing wasn’t just for the participants. As the literacy teacher explained on recapping the first session of one program:

... oh yes, and that this wasn’t just information for them, that it was information to help their family, their friends, their neighbours, their grandchildren to make healthier choices, so, you know, when your grandchildren come over, it’s ok to give them a little bit of a treat but not too much ...that was the key message ... making healthy choices for your kids ...

We have already seen how participants have used their new found diabetes knowledge to assist their spouses in regulating and monitoring their diets and there was extensive evidence of participants informing and advising other members of their immediate family on
food and nutrition, in particular their own children. The dietitian commented that one participant:

 took a brochure ... she took it back to her daughter and she said look, this is what the department of health ... it was almost coming here, it almost validates their own knowledge as a parent. It's not that I'm telling you to do it, but hey, the department of health tells you this is what you should be eating ...

Extended family and friends were also the recipients of offers of help and prescriptive advice as the following comments indicate:

➢ Now I say to, I have a few friends, family, but marriage family with my sister, and they have diabetes and I come to them, I tell to them ... if you want I cook you something and I send you and email to you (Iranian participant)

➢ (I say) Mum that is wrong, you have to like this, you have to cook chicken, zucchini ... I email to my friends, they live in here, and I talk to them, they are so happy, they say you are daughter (she laughs) (Iranian participant)

Some Iranian participants also communicated health/diabetes messages to their extended family back in Iran. One woman said of her mother in Iran, “I speak to her on telephone, and everything here give to me I am post for her and also I write in Persian to her.”

Neighbours and occasionally complete strangers were also provided with advice on diabetes prevention. One Iranian participant was at a public swimming pool where she met a Turkish woman and proceeded to give her advice on preventing diabetes, “I study diabetes, sugar, ok, you have to eat like this, you have to exercise ... and she said, oh thank you, thank you my daughter” (clearly an expression of endearment). On some occasions, however, the advice wasn’t always welcomed. An Armenian participant commented that she provided advice on what she had learnt to other Armenian people, only to be told, “you are not a doctor”, indicating that for some community members it was the voice of expert opinion that counted.

One final social capital element involves the interpreters in three of these programs because they personally learnt a lot about diabetes and preventing type 2 diabetes. These interpreters became important local community contacts for their respective ethnic communities and an important source of information for disseminating information to other community members. As a literacy teacher commented about the Chinese translator:

When she pops in and out, she communicates with them (with other Chinese residents in the Neighbourhood Centre). She’s got all this knowledge that she’s accumulated and messages that she’s accumulated ...

Follow-up evaluations

In addition to the qualitative data explained in the methodology section, an evaluation sheet was designed to follow up participants in the post program phase (see Appendix B) as an indication of behaviour change. While the intention was to conduct this evaluation one month after each program, in practice this proved difficult and evaluations were conducted from one to three months after. The evaluations were mainly undertaken over the phone in the language of the participants, but in three programs the community worker asked the participants to complete the survey at a later community function.

Not all participants were available for this follow-up evaluation. A total of 63 participants completed the courses, but only 50 (79%) were available to complete the post evaluation. There were a number of reasons for this. In some cases participants were overseas at the
time of the evaluation and in other cases they were simply not contactable or available at
the time the evaluation was undertaken.

There was a surprisingly high degree of consensus amongst respondents to the follow-up
survey. The main findings were as follows:

- 96% of respondents thought that attending the programs had given them
  information that helped them to make lifestyle choices to help prevent type 2
diabetes.
- 96% thought that preventing type 2 diabetes was important for themselves and
  their families.
- 92% felt confident they could make healthy eating and lifestyle choices to prevent
  type 2 diabetes.
- 88% claimed to have made changes to the food they ate after attending the
  program.
- 66% claimed they did more exercise after attending the program. Walking regularly
  (and fast) was most often mentioned by the respondents, though badminton,
  exercise at home, swimming, gym, Tai Chi and dancing also featured. One
  mentioned, “Now I dance to fast music at home three times a week”.
- 90% thought the handouts in the programs helped them to understand ways to
  prevent type 2 diabetes. Coloured booklets on healthy food choices (Diabetes:
  Making healthy food choices, supplied by Diabetes Australia NSW) featured
  extensively as a valued resource. Pedometers were also valued by participants.
- 60% said they would like further help or advice about diabetes prevention. Some
  said they wanted another program, while others wanted more information or to talk
  with a dietitian about their own special needs.
- 94% said they had told someone else about what they had learnt from the course.
  Most often this included their immediate family and relatives, but also friends,
  including those from other networks (e.g. fellow church members).

These findings indicate clearly that the great majority of the participants felt that the
programs were important to them and they benefited from them. The high percentage
claiming they had spoken about what they had learnt to others confirmed the social capital
implications suggested earlier.
Implications and conclusions

What was new and how effective was it?

Health professionals providing advice on preventing type 2 diabetes to various CALD groups in local community contexts is not new (see Colagiuri, Thomas & Buckley 2007). But there were features of this project, especially in combination, which made the overall project quite innovative. First of all, the focus was on ‘diabetes literacy’, a relatively new concept and certainly not a concept that has to date had an impact in health debates. Second, the intervention programs featured partnerships between health and literacy professionals at the organisational (meso) and client interface (micro) levels which in the Australian context is rare. Third, the programs were not short, one-off information-type sessions on type 2 diabetes prevention which are quite common for pre-diabetes groups, but rather, extended programs over seven weeks which enabled some in-depth issues to be worked through with client groups. Fourth, the programs were delivered primarily in the dominant language, English, but with interpreter assistance where required and with structured learning support (integrated literacy and numeracy) provided by an adult literacy teacher. Finally, the project reinforced the potential value of a social capital approach to health interventions in both the way the sessions were structured (the pedagogy) and in the way the health messages were spread within communities through social networks.

The qualitative interview data and evaluative data presented in the Findings section in this project indicate clearly that many of the participants considered they had benefited personally from the programs. Individual participants learnt much about diabetes and measures to prevent type 2 diabetes, and there was evidence of behavioural and lifestyle changes that encourage improved health outcomes for participants. Importantly also, there was evidence that the health messages were not confined only to the participants in the programs. It would be difficult to measure the total impact of these programs without an analysis of the extent to which the participants utilised their social networks to convey information about diabetes and preventing type 2 diabetes. There is clear evidence in this project of health messages in the form of verbal advice and published Diabetes resources extending far beyond the participants in the programs, in some cases extending overseas.

Health and literacy professionals working together

In the literature review we cited Rudd (2002), a well known health literacy specialist in the United States, referring to ‘a maturing partnership’ between the literacy and the health sectors in the United States. By comparison, and adopting a relationship metaphor, this would make the partnerships between the two sectors in Australia akin to a ‘first date’. There are very few documented cases in Australia of health and literacy professionals working in partnership (Black 2008), which makes this current project quite significant.

The literature review indicated that in some respects both the health and adult literacy sectors have shifted their professional focus in the past couple of decades from ‘clinical’ approaches to the ‘social’ approaches. Adult literacy studies, for example, were once dominated by psychological paradigms and literacy was viewed conceptually as a single set of ‘autonomous’ skills which could be measured in reading ages and the like. This has now given way at least in part to a social practices perspective with a focus on how literacy (or multiple literacies) are valued and used in people’s everyday lives. This fits comfortably with an ‘integrated’ concept where literacy and numeracy skills are inseparable from the social
context in which they are used. In the health sector, there is now a major focus on the social
determinants of health and the need therefore to redress significant social (and economic)
inequities in societies. Significantly, key elements of the language of health promotion such
as empowerment, community capacity building, partnerships and social capital resonate
strongly with the current language of the adult literacy field.

Given this cross sector resonance, it was perhaps not surprising that this project
demonstrated health and literacy professionals working together harmoniously. There
appeared to be an unstated but accepted philosophical congruence on the part of health
professionals and adult literacy teachers working at the client interface. Comments from the
presenters that they felt sufficiently comfortable working with each other that they could
“just jump up and interchange” are an indication of an effective working relationship. Adult
literacy teachers have long worked within a pedagogical discourse that draws on the
expressed and negotiated needs of the students and which engages the students in all
phases of delivery. The health professionals in this project by the same token found it easy
to work within such a discourse and in fact already did. In every program there were
important cross-disciplinary benefits as literacy and health professionals learnt from each
other.

Where to from here?

This project represents a small pilot study of one local form of intervention focusing on CALD
groups, but importantly, it indicates the potential value of developing further these types of
programs with cross-sectoral partnerships involving health and adult literacy and utilising
local community networks. However, to go beyond ‘pilot’ and sometimes ad hoc health
literacy projects depends to a large extent on broader government policy. Currently there is
no government policy driving the health literacy agenda. Most health literacy programs in
Australia, and in particular those involving health and literacy sector partnerships, are based
on local initiatives designed to address local health needs and undertaken with short term
funding. There are no overall strategic plans or policy directions guiding these initiatives
(Green, Lo Bianco & Wyn 2007, Balatti, Black & Falk forthcoming). However, the momentum
for change appears to be gathering with the recent Australian health literacy survey
(Australian Bureau of Statistics 2008) providing some much needed data to make the case
for government promotion of health literacy initiatives. Examples of projects such as this
one might also add to the momentum for change.

In conclusion, this project, whilst being small-scale and a pilot study, has a contribution to
make on a number of fronts. Conceptually, it helps to put diabetes literacy on the map. It
also provides an intervention model in the fight against type 2 diabetes that appears
effective at the local level, and quite possibly has a much wider impact, taking into account
the social networks of the program participants. And finally, it indicates how the health and
adult literacy sectors can work together effectively within an ’integrated literacy’ concept,
not only in diabetes education, but potentially in a wide range of other health related areas.
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Appendix A – Focus interview questions

Why did you come to this course?
Have you enjoyed the course?
If yes, what have you enjoyed most?
Anything you would like changed for future courses (improvements)?
Is this course important for you and your family (expand)?
Has diabetes affected anyone in your family/anyone you know?
What are the most important things you have learnt from this course?
Has it changed your life in any way? Do you do anything differently (food, diet, exercise)?
Do you feel more confident/better knowing more about diabetes?
Have you spoken to anyone else about what you have learnt from this course?
Has the course affected anyone else (indirectly, family, friends)?
Have you made friends with the other students?
Were the teachers helpful? Was it good having two teachers? (explain) What did you learn from each of them?
How did the teachers work together?
Were there any really useful resources you will continue to use?
What would you like to do next, after this course? Do you know where to go for more help with diabetes?
Appendix B – 1 Month Post Session Follow-up Telephone Survey

1. Do you think that attending the diabetes prevention sessions at (insert group) has given you information which will help you make lifestyle choices to help prevent type 2 diabetes?
   Yes ☐ No ☐ Don’t Know ☐

2. Do you think that preventing type 2 diabetes is important for you and your family?
   Yes ☐ No ☐ Don’t Know ☐ Maybe in the future ☐

3. Do you feel confident that you can make healthy eating and physical activity choices which would help prevent type 2 diabetes for you?
   Yes ☐ No ☐ Don’t Know ☐

4. Did you make any changes to the food you eat after attending the sessions?
   Yes ☐ No ☐ Don’t Know ☐

5. Did you do exercise more often or take up any new physical activities after attending the sessions eg gardening, Tai Chi, walking?
   Yes ☐ No ☐ Don’t Know ☐

   If yes, please tell us which activities and how often

6. Did the handouts you received help you to understand ways to prevent type 2 diabetes?
   Yes ☐ No ☐ Don’t Know ☐

   If yes, which resources were most useful to you?

7. Would you have liked any further help or advice about diabetes prevention?
   Yes ☐ No ☐ Don’t Know ☐

   If yes, what would have helped you?

8. Have you told anyone else about what you learnt from the course?
   Yes ☐ No ☐ Don’t Know ☐

   If yes, who did you tell and can you explain if the information helped them?