

Psychosocial and behavioural aspects of NIDDM among Pacific islanders in South Auckland

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Introduction

Auckland with 49,000 Pacific islands people and 47,000 Maori, is the world's largest Polynesian city. South Auckland (1991 total population 303,000) has a particularly large Polynesian community with Pacific islanders and Maori in the majority in some suburbs (e.g. Otara: over 90%)¹.

The four fold excess of non insulin dependent diabetes (NIDDM) among Polynesians when compared with New Zealand Europeans², has made NIDDM a major public health problem in South Auckland. Within the next 10-20 years, the number of people with diabetes is projected to increase by 20% among Europeans, 50% among Maori and 130% among Pacific Islanders³. Pacific islanders and Maori who have a higher incidence of risk factors and diabetes associated complications like renal failure, blindness, foot lesions, myocardial infarction and congestive cardiac failure, show a correspondingly high level of health service utilization².

In view of the demonstrated cost effectiveness of early intervention in diabetes, a process has been underway in South Auckland, for four years, to bring together researchers, diabetes care providers, local institutions and the local communities into a 'Planning Group' and then a 'Core Group' to devise and implement a 'Diabetes Plan for South

Auckland"^{1,3}. The overall strategy emphasises coordination, partnership and integration, combining medical, epidemiological and social scientific approaches to problem analysis, to develop interventions reflecting the views of stakeholders.

This paper describes both community and individual behavioural issues that were initially identified and places them in the context of the international literature. based on this and our experiences in South Auckland, we propose a general model to overcome these psycho-social and behavioural barriers to diabetes care. This paper highlights some established theories of human behaviour which shed light on variations in individuals responses.

Perceived barriers to diabetes care

Surveys in South Auckland of individuals with diabetes and their health care providers had previously quantified the degree of damage from diabetes, as well as analysing several questions in relation to the diabetic care services^{4,5,6,7}.

The data were then presented to a variety of local service providers (eg physicians, hospital administrators, diabetes team members) and their comments

were also recorded and collated using a method of content analysis⁸ and included in the Diabetes Plan for South Auckland³. The results are shown in Table 1

The most important barriers to care from the patients' point of view were finance, conflicting advice from different care providers and their own personal attitudes to diabetes and life in general. General practitioners reported patient attitudes, finance and the overall organisation of diabetes provision as major barriers to care. The administrative and diabetes clinic providers considered the main barriers to be finance, language and culture, organisation/coordination of services, and family attitudes and (inadequate) support. Interestingly, the patients rarely commented on the importance of culture or language as barriers to care. This may have been due to the high proportion in the sample attending a community diabetes clinic (the South Auckland

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Diabetes Centre) where they saw Pacific Islands and Maori community diabetes educators.

Figure 1 shows a diagram of the barriers to good diabetic while Figure 2 shows strategies that may be implemented to overcome these barriers. The first wave of strategies was described in the Diabetes Plan for South Auckland^{3, 4}. It specified improvements in the local services, an increased focus on the diabetic's living environment, and increased knowledge of diabetes in the community, and augmenting support mechanisms.

The patient/practitioner relationship

It is clear that for both patients and care providers, the psychosocial influences on diabetic care, are important. Although little has been published about the differences in perspectives and priorities that exist between patients and health professionals, there is evidence that these may be of major significance⁹. Patient empowerment, as opposed to a compliance oriented approach to diabetes care is increasingly emphasised by diabetic service providers¹⁰.

Essentially, patients have never "done as they were told" but instead have constructed their own priorities within their lives according to external pressures, knowledge and personal perspectives. While modern diabetes care attempts to maximise knowledge through education, behavioural approaches to the acquisition of knowledge and implementation of new skills are complex and remain under development. An understanding of these psycho-social aspects of diabetes care include a large number of components which may assist with the delivery of care and optimise the conditions for patients' self care.

Components of diabetes self care

Modern diabetes care includes self care. Self care may be distinguished by changes to existing lifestyle including stopping smoking, exercising regularly and eating healthily, and the adoption of the regulatory functions of self glucose monitoring, foot care, clinic attendance, blood tests, injections and self medication. While any aspect requires effort to maintain on a regular basis, there is greater success with adopting additional functions than changing existing lifestyle¹¹. Eating behaviours are particularly resistant to change because they are connected to strong family patterns and routines and deeply embedded in cultural patterns¹². Communication clearly needs to be optimal when such lifestyle change are being addressed to maximise the chance of a successful interaction. A patient centred

approach is required with a warm, caring manner, a readiness to listen, discuss and explain clearly. Communication needs to be clearly understood both from the language and educational perspectives.

Good self care depends upon knowledge. Five characteristics have been suggested to improve the efficacy of patient education in clinical practice: reinforcement, feedback, individualisation, facilitation and relevance¹³. The more relevant the content and methods used are to the learner's interests and circumstances, the more the learning process is likely to appeal to the learner. This underscores the importance of audio-visual aids and written information which depict Maori and Pacific island cultures. Facilitation denotes the degree to which an intervention either provides the means for patients to take action (e.g. skills training) or reduces barriers to action. Research on intrinsic motivation suggests that feedback should include a task-related informational component¹⁴.

While a detailed knowledge of diabetes underpins the ability to adopt both regulatory and lifestyle changes, it does

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not ensure that the requisite behaviour will follow. Knowledge is a necessary, but not usually a sufficient, condition for change. Predisposing, enabling and reinforcing factors have been proposed to facilitate or hinder a given health behaviour¹². Knowledge is a predisposing factor, along with attitudes, beliefs, val-

ues and perceptions that help or hinder motivation for change. Enabling factors are those skills, resources, or barriers that make possible a change in behaviour. Reinforcing factors in the form of rewards, penalties and feedback have the effect of encouraging or discouraging the continuation of a behaviour.

Furthermore, it is important that people are able to envisage the possibility of success in accomplishing a task¹⁵. According to self-efficacy theory, individuals' judgements of their capabilities to perform a task or behaviour determine which behaviours they will engage in, their persistence in the face of obstacles or temptation, and how much effort they will expend to achieve their goals. The successful maintenance of a diabetes regimen requires goal direction and persistence. The contribution of self-efficacy has been demonstrated in relation to insulin dependent diabetes mellitus (IDDM)¹⁶ and NIDDM¹⁷.

Individuals form their self-efficacy judgments on the basis of four hierarchically ordered sources of information: enactive attainment, vicarious experience, verbal persuasion and physiological state. Enactive attainment is based on an

Table 1. Perceived barriers to care as described in 'Diabetes Plan for South Auckland'

Barriers reported	European pts (n=331)	Maori pts (n=86)	Pacific Is. (n=123)	General practice (n=164)	Hospital (n=15)
Personal or service finance	14%	30%	21%	51%	100%
Availability of transportation	2%	2%	4%	15%	47%
Personal mobility	1%	3%	4%	0%	7%
Patient and provider time	1%	0%	1%	28%	40%
Provision of conflicting advice to patients	11%	14%	24%	0%	60%
Patient attitudes to diabetes and self-care	5%	16%	19%	77%	53%
Family attitudes and support	2%	7%	6%	0%	67%
Organisation /coordination of the services	5%	3%	2%	29%	93%
Cultural /language factors	0%	0%	0%	20%	93%
Frequent changes of address	0%	0%	0%	7%	0%
Any barrier reported	31%	34%	28%	90%	100%

From. Diabetes in South Auckland, Appendix A16 (Reference 1)

individual's own mastery experience and is the most influential source of efficacy information. Tasks must be structured so that progress is recognisable. Vicarious experience occurs when individuals view others as models and compare themselves with the observed experience. The third source of self-efficacy, verbal persuasion, is apt to be as strong as the recipient's confidence in the person who gives it¹⁶.

The main lesson here is that goal attainment is easier in the presence of an action plan which the patient has helped formulate when it sets realistic, graded goals compatible with the patient's culture. It would appear that, in earlier years, food exchange lists developed by dietitians to assist Polynesians lose weight paid little or no heed to traditional food preferences. Efforts are now being made to develop food exchange lists which promote healthy foods which are culturally acceptable¹⁸. Also important, is the teaching of coping skills and problem solving to assist patients maintain control at times of difficulty.

Locus of control is another concept explored in research on diabetes-regimen-adherence. It emerged from social psychology and subsequently was applied to health behaviours¹⁹. More recently, diabetes specific locus of control measurement scales have been developed²⁰. The health locus of control model consists of three distinct dimensions of belief about the possible control of health: the internal, the powerful other and chance. People who score high on the internal scale are more likely to believe that health is the result of their own behaviour, while high scores on the other two suggest either that health depends on the action of powerful others or on chance, fate or luck¹⁹.

While earlier research commended high internalising, it is unclear which orientation is most likely to produce desired health-related outcomes. A clearer picture emerges when self-blame is considered as a possible concomitant of high internality and the variable nature of the quality of help offered by 'powerful others' is taken into account. "Some support people may be part of the problem, but others are part of the solution"²¹. An important consideration in the

case of Maori and Pacific people is the influence of their spiritual beliefs. Belief in a powerful and loving deity who watches over all may be a source of strength and will to endure. Alternatively, it may encourage passivity in a person who thinks that his/her fate rests entirely with God, or that illness is a deserved punishment for past sins.

Extended family members are likely to feature prominently among 'powerful others' for Polynesian people. Because of the central role of the family, the results shown in Table 1 show that Maori and Pacific Island patients were more likely to comment on the family as impacting on their diabetes and family members were more likely to perform the glucose monitoring on diabetic relatives²². It is also of interest that increased social obligations towards friends and relatives have been identified as a "main stressful element" for migrating Samoans²³. Stress experienced in endeavouring to meet obligations towards others may compromise personal health promoting behaviours.

The following section describes two models which incorporate the concepts discussed so far. The Health Belief

model²⁴ and the Stages of Change model²⁵ offer complementary perspectives on compliance behaviours and the process of adopting new, or modifying existing behaviours in the interests of one's health.

The Health Belief model

The Health Belief model was developed to explain and predict health-related behaviour²⁴. It has two key variables. First, the importance placed by an individual on a particular goal and second the individual's estimate of the likelihood that a given action will achieve that goal. These have been conceptualised in four dimensions^{12, 24}.

1. Perceived susceptibility: The person must believe that his or her health is in jeopardy. For an asymptomatic disease, the person needs to believe that he or she can have it and not feel symptoms. This has major implications for diabetes, which is insidious.

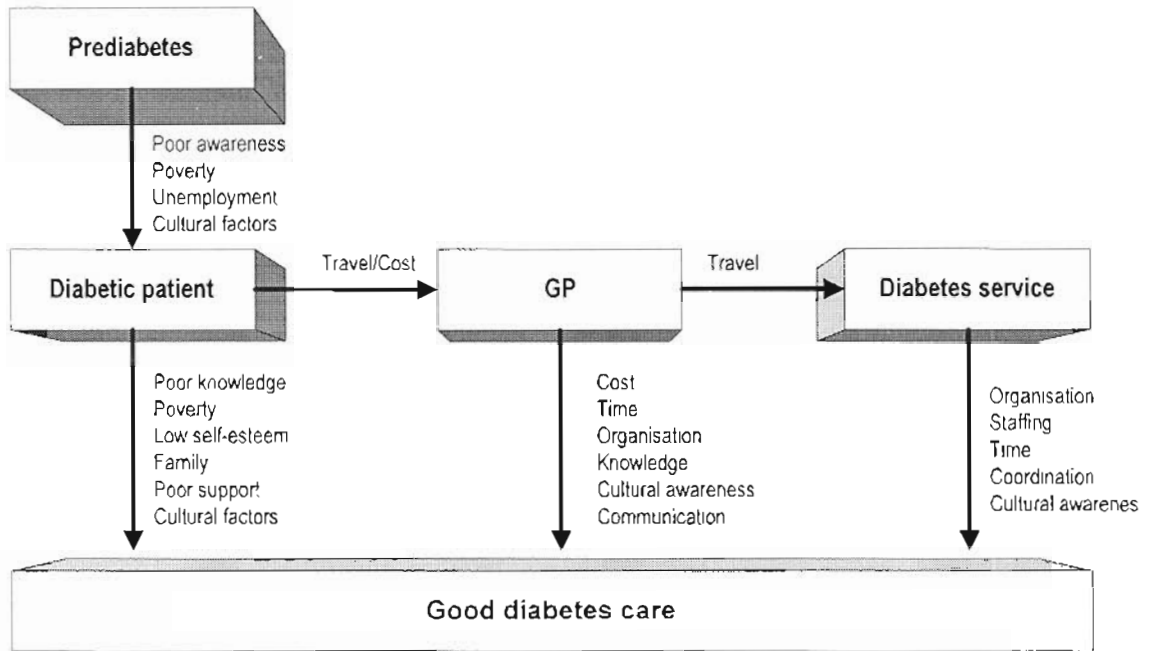
This raises the issue of different cultural perceptions of illness and disease. Especially for Pacific island people,

Table 2. General guidelines for applying stages and processes of change to diabetes care (Ref.27)

Stage readiness	Key factors associated with movement to next stage	Treatment do's at this stage	Treatment don'ts at this stage
Precontemplation	Increased information and awareness, emotional acceptance.	Provide personalised information. Allow patient to express emotions about his or her disease.	Do not assume patient has knowledge or expect that providing information will automatically lead to behaviour change. Do not ignore patient's emotional adjustment to the disease which could override ability to process relevant information.
Contemplation	Increased confidence in one's ability to adapt recommended behaviours.	Encourage support networks. Give positive feedback about a patient's abilities. Help to clarify ambivalence about adopting behaviour, and emphasise expected benefits.	Do not ignore the potential impact of family members, etc on patients ability to comply. Do not be alarmed or critical of a patient's ambivalence.
Preparation	Resolution of ambivalence, firm commitment and specific action plan.	Encourage patient to set specific, achievable goals (e.g. walk briskly for 15 minutes at least 3 times a week). Reinforce small changes that patient may have already achieved.	Do not recommend general behavioural changes (e.g. 'Get more exercise'). Do not refer to small changes as "not good enough".
Action	Behavioural skill training and social support.	Refer to education programme for self-management skills. Provide self-help materials.	Do not refer patients to 'information-only' classes.
Maintenance	Problem-solving skills, social and environmental support.	Encourage patient to anticipate and plan for potential difficulties (e.g. maintaining dietary changes on vacation). Collect information about local resources (e.g. support groups, shopping guides). Encourage patient to 'recycle' if he or she has a lapse or relapse.	Do not assume that initial action means a permanent change. Do not be discouraged or judgemental about a lapse or relapse.

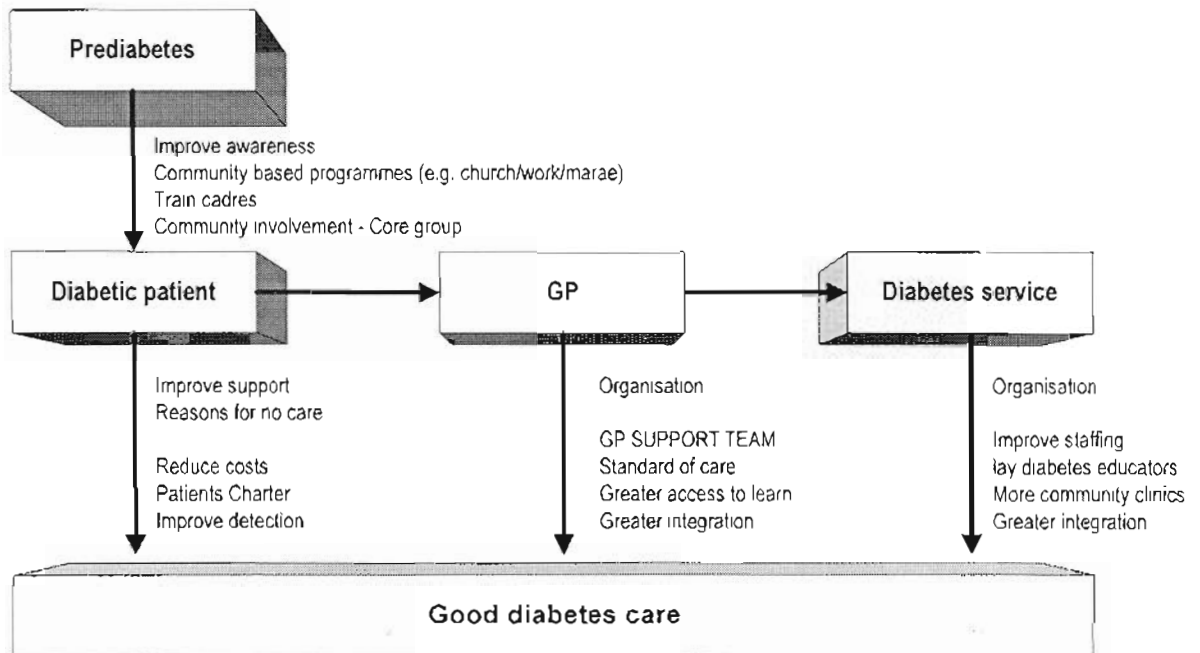
From: Curry S.J. *From Research to Practice: Commentary. Diab Spectrum* 1993;6:34-35

Figure 1. Model to collate all barriers to self care



Presented at the New Zealand Dietetic Association Jubilee Conference 1993

Figure 2. Model to collate strategies to overcome barriers



Presented at the New Zealand Dietetic Association Jubilee Conference 1993

illness is perceived as adversely affecting relationships and performance of duties, while, disease is defined and legitimised by the medical profession²⁶. A common criteria in definitions of both illness and disease is how much a condition affects capabilities and performance in day to day life. In the case of diabetes, this may represent a real barrier to a person's motivation to seek screening or treatment.

2. Perceived severity: The person must perceive the potential seriousness of the condition in relevant terms e.g. pain, time lost from work, economic difficulties and so forth. Health providers also implicitly communicate messages about seriousness e.g. failure to provide services at times required by patients can imply that diabetes is "not so serious" as to require such clinics. Furthermore, while patients themselves may acknowledge the dangers posed by poorly managed diabetes, if others (e.g. family and friends) around them do not, they may fail to keep or support the lifestyle changes required.

While heart disease, stroke, kidney failure, amputations and blindness are invariably viewed as serious, they are not commonly recognised as consequences of uncontrolled diabetes. This highlights the importance of education, especially for Maori and Pacific island people who are at high risk of both diabetes and its complications.

Appropriate perceptions of both susceptibility to diabetes and its complications and the severity of diabetes can be substantially undermined by poor experience with clinical staff, knowledge of individuals who did not follow advice and appear well, and knowledge of individuals who appeared to follow advice and were still damaged or died, particularly if soon after commencing some aspect of therapy e.g. insulin. Such experiences may need to be discussed prior to any improvement in self care.

3. Perceived benefits and costs: The perceived benefits from the recommended behaviour must outweigh the costs and inconvenience and be seen as attainable. In the Pacific islands there is a high value placed on being happy, a person may prefer not to reveal news of a chronic illness and disrupt family happiness. If the diabetic has no part in food preparation, the risks of hiding one's diabetes are so much greater. Generally, many Polynesians place credibility to the association of affluence and attractiveness with large body size. This means that some may not be easily convinced of the benefits of dietary change with a view to weight loss and that if they do proceed they will have to withstand counterproductive social pressure.

4. Presence of a Cue to Action: There must be a "cue to action" or a precipitating force that makes the person feel the need to take action. This can be health education, a personal health crisis such as a myocardial infarction, or the death of a close friend or relative known to have diabetes. Some will continue despite all eventualities.

Readiness to change

The Stages of Change Theory²⁵ postulates that individual decisions about lifestyle change may be viewed in terms of five stages namely:

- **Precontemplative** - Denial of a problem or responsibility for a problem. Individuals are not intending to change lifestyle in the foreseeable future.
- **Contemplative** - Individuals are seriously thinking about change but have not set a plan of action
- **Preparation** - Individuals are intending to change and/or have taken small steps to change lifestyle
- **Action** - The 6 month period after an overt effort to change has been made
- **Maintenance** - Individuals have undertaken the changes in lifestyle and maintained them for at least 6 months.

People may progress through these stages at their own pace or remain 'stuck' at any particular one. Some people will not move beyond the first stage and others may fluctuate between stages. A further stage is 'relapse' where part or all of the lifestyle changes regress to the previous life style.

Clearly the method for informing, advising and supporting patients with diabetes needs to be accommodated within the framework of any pre-existing beliefs or attitudes and potential for alienation. A key question for clinicians is, "what are realistic expectations for this person?" Table 2 details guidelines on approaches to patients according to their stage of change²⁷.

Social support

A strong relationship exists between individual health status and the presence or absence of social support²⁸. Churches and family ties are important support systems for Pacific islanders. Pilisuk & Minkler offer a fitting and timely reminder that family and community effectiveness in the provision of social support is heavily dependent upon the broader economic and social environment. "To overemphasise the singular influence of social ties on health and to ignore the broader context within which those social ties must operate, is to politically misuse the findings on the social support and health relationship"²⁹.

Fear of hypoglycaemia and 'needle phobia'

Fear of hypoglycaemia and "needle phobia" have (understandably) been investigated in IDDM rather than NIDDM and as such are not discussed in this review²⁸.

Conclusion

NIDDM is a major health problem among Pacific islanders. The underlying reasons for the development and maintenance of obesity and an inability to control diabetes are complex. Research into the genetic and utero mechanisms leading to obesity, NIDDM and their complications will continue to yield important strategies for management. However, both obesity and NIDDM require major behavioural strategies to improve quality of life and to prevent complications and death. We feel that many of the current cues for poor diabetes self care could be overcome with improved diabetes awareness among the Pacific Islands communities, increased family and community support for diabetic patients, systematic inclusion of behavioural evaluation with a view to tailoring routine diabetes care, and improved organisation, coordination and affordability of diabetes services. National plans to control diabetes are underway in many countries and address many of these issues. We advocate the development of district based plans, similar to the 'Diabetes Plan for South Auckland', and urge local partnerships in order to personalise the interventions. Such local processes would form a sound foundation for national strategies designed to control diabetes.

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