

Online access and literacy in Maori New Zealanders with diabetes

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ABSTRACT

INTRODUCTION: Online web-based interventions can be effective ancillary tools for managing diabetes. There is a high prevalence of diabetes in New Zealand Maori, and yet this group has generally been a low priority for web-based interventions due to perceptions of low Internet access and Internet literacy.

AIM: To assess Internet access and literacy in New Zealanders with diabetes, especially high-risk Maori.

METHODS: A telephone survey of all patients with diabetes in an urban general practice. Internet access is assessed by Internet presence in the home, and Internet literacy by the ability to use email and the World Wide Web.

RESULTS: One hundred percent response rate with 68 participants, including 38% Maori. Internet access for Maori was 70% and Internet literacy 41%.

DISCUSSION: Internet access and literacy for Maori with diabetes may be higher than previously thought. Health policies may wish to focus effective and cost-efficient web-based interventions on this high diabetes risk group.

KEYWORDS: Diabetes mellitus; Maori; Internet; electronic mail; New Zealand; indigenous health services

Introduction

Diabetes process and outcomes can be favourably influenced by Internet-based interventions.¹ New Zealand (NZ) has a high prevalence of diabetes (8%) in indigenous Maori people,^{2,3} who number 565 329 or 14% of the population.⁴ New Zealand also leads the world in some areas of health information technology,^{5,6} yet despite this environment, there is little published information describing computer access in the diabetes population, and we are not aware of any reports describing Internet literacy in the same group. We report a pilot study examining Internet access and Internet literacy in a cohort of NZ patients with diabetes, including Maori who are known to be at a higher risk for developing diabetes.

approval was received by the Northern Y Ethics Committee (ref. NTY/07/39/EXP). The practice has approximately 1400 patients, in a multipartner general practice located in a medium-sized city (40 000) in Northland, NZ. A diagnosis of diabetes required evidence of a glucose tolerance test, which, along with ethnicity, age and gender, was acquired from the electronic health record. As part of this study, participants were asked whether they had computer and Internet access in their home. Internet literacy was assessed as whether participants knew how to use email and the World Wide Web. Rurality was assessed as a residential address outside of Whangarei city boundaries. The R statistical environment was used for statistical analysis of categorical counts using chi squared with 95% confidence intervals.

Methods

In August 2007, diabetes patients in the practice of one of the authors (SR) were invited to undertake a 30-minute telephone survey examining the implications of electronic personal health records for patients with diabetes. Ethical

Results

The response rate was 100%. There were 68 people with diabetes, 12% with Type 1, 87% Type 2, and 1% gestational. The number of males (47%) and Maori (38%) were similar to diabetes findings in the 2006/2007 New Zealand Health Survey

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($p=0.823$, $p=0.050$);⁷ however the mean age at 66 is older in our study ($p=0.001$).

Internet access was 61% in the study group overall, which is the same as the general population in the 2006 Census of Populations and Dwellings ($p=0.461$).⁸ The mean age overall was 62, with Maori generally younger (60.89), compared to non-Maori (69.54), $p=0.005$. Internet access was similar for males (66%) and females (58%), $p=0.490$, and for Maori (70%) and non-Maori (56%), $p=0.236$. Compared to Maori Internet access in the 2006 census (46%), Maori Internet access (70%) was significantly higher ($p=0.013$), and non-Maori Internet access was significantly lower ($p=0.044$).

Internet literacy was evident in 41% of the study group overall, and was similar between males (43%) and females (45%), $p=0.829$, and for Maori (41%) and non-Maori (46%), $p=0.649$.

Nearly one-quarter (22%) of the group lived in a rural location, and the majority of these rural patients were Maori (66%).

Discussion

In this study, Internet access for Maori with diabetes is higher than in previous surveys, and Internet literacy is reported for the first time. Patient-centric features associated with changing diabetes health needs may be encouraging Maori to explore non-traditional health-related activities such as the Internet. Another explanation is activities external to the patient, including an increasingly ubiquitous Internet environment with Internet provider fees falling, rural connections improving, and an increasingly Internet-demanding and enquiring younger generation who live in extended Maori families.

Our first-reporting of Internet literacy in patients with diabetes highlights differences between access and literacy—what we have defined as an access-literacy gap (AL). The AL gap describes having access to Internet technologies, but not being able to use them. In this study we observe an AL gap of 10% for non-Maori, and three times that (29%) for Maori. This raises important strategic issues around rethinking the hurdles for Internet-based health interventions for Maori with diabetes. Immediate health benefits may be gained

WHAT GAP THIS FILLS

What we already know: Internet interventions can be effective in chronic diseases like diabetes. Maori have a high prevalence of diabetes; however little is known about Internet access and Internet literacy in this group.

What this study adds: Maori patients with diabetes have higher levels of Internet access than Maori in the general population. Improving Internet literacy with education and training is an immediate intervention that would provide Maori with online tools and resources for improving diabetes.

by training and educating Maori patients with diabetes on their existing computer systems. Training of this type could utilise the rich whanau framework, complete with technology-literate younger generations living in extended family situations.

Limitations of this study include small numbers and generalisability, although consistency with large national surveys is noted. In this study, Maori are generally younger than non-Maori and age has a known relationship with Internet use. Also, more sophisticated tools for assessing Internet literacy exist, and would provide further granularity of user use, understanding and preferences.

These points notwithstanding, the implications for health policy are that web-based interventions may be more amenable than previously thought in targeting the high diabetes risk Maori population.

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COMPETING INTERESTS
None declared.