

# Exploring the feasibility and acceptability of using Internet technology to promote physical activity within a defined community

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## Introduction

Physical activity programs that focus on individuals and small groups using face-to-face delivery strategies are expensive, have limited population reach, and thus limited potential in terms of public health impact.<sup>1,2</sup> Population-based programs have typically relied on mass media and print material delivery. Mass media campaigns have been effective in increasing population-level awareness of physical activity, but their impact on behaviour has been modest and short-lived.<sup>2,3</sup> Controlled trials of tailored print materials indicate they can be effective in prompting short-term changes in behaviour.<sup>4-6</sup>

New communication technologies (e-mail and the Internet) have the potential to deliver programs to large numbers of people at low cost.<sup>2,5,7</sup> Advantages include novelty of design and appeal, flexibility and convenience of use, and the potential for interactive data collection that can provide immediate, personally relevant feedback.<sup>2,7</sup> The cost of administering and

delivering an Internet-based program does not increase linearly with volume of access. These are potentially significant (but largely untested) advances in terms of program reach and capacities to provide systematic, individually relevant programs to individuals at realistic cost.

Initial trials of Internet-based physical activity programs have shown significant short-term effects.<sup>8-10</sup> However, most were conducted with small samples of volunteer participants, thus limiting our understanding of generalisability and potential population impact. A large-scale Australian study found that participants' attention to and engagement with a website-delivered program was low<sup>11</sup> and that it had limited impact on behaviour.<sup>12</sup> Others have reported difficulties in engaging and retaining participant interest in web-based programs.<sup>9,10</sup> Most trials have been conducted through worksites.<sup>8,10,12</sup> Thus, the wider reach and appeal of this medium as a means to promote physical activity to the public has not been established.

## Abstract

**Issue addressed:** To explore the feasibility of using the Internet and e-mail to promote physical activity in a defined community.

**Methods:** An online survey was conducted through a community-based Internet Service Provider (ISP). ISP clients were recruited via electronic newsletter and direct e-mail. Data were collected on preferred sources of assistance for physical activity advice and stage of motivational readiness for physical activity.

**Results:** Valid surveys were completed by 797 (9% response rate). Participants were: 55% men; 56% aged >45 years; 57% worked full time; mean BMI was 28±8. Thirty-six per cent were in the early stages of motivational readiness for physical activity. More than 70% were somewhat to extremely interested in having access to a physical activity website.

**Conclusion:** Promoting physical activity via the Internet and e-mail is feasible and appealing to some people. Expanding the reach, appeal and use of this technology to deliver physical activity programs will be a challenge.

**Key words:** Physical activity, intervention, behaviour change.

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## So what?

The use of new communication media (Internet and e-mail) is a feasible way to connect with adults in the community. The effectiveness of these media as a means to promote physical activity to community members should be explored.

A fundamental requirement of achieving population impact is being able to reach the target group and provide an effective program that meets the needs of individuals.<sup>1</sup> The aim of this study was to investigate the feasibility and appeal of using Internet and e-mail systems to reach adults living in the community to deliver physical activity programs.

## Methods

An online survey was conducted in June 2003 with the assistance of a community-based Internet Service Provider (ISP) located in a distinct regional community to the west of Brisbane, Queensland. The study was approved by the University of Queensland Human Research Ethics Committee.

ISP clients were invited to participate in the survey via the ISP electronic newsletter, then by direct e-mail, over a 12-day period. Clients who completed the survey by the closing date were placed in a draw to win a 12-month ISP dial-up subscription. An invitation to participate was sent to some 9,000 e-mail accounts estimated by the ISP to be current.

All questions in the survey had been used in previous research. Besides standard demographic questions, questions about participants' preferences for receiving advice about physical activity,<sup>13</sup> stage of motivational readiness for physical activity,<sup>12</sup> and computer use were asked.

Survey responses were automatically entered into a database, which was imported into SPSS v11.0, where descriptive statistics were calculated.

## Results

Forty-six clients completed the survey after the initial invitation was sent in their electronic member newsletter. Another 774 completed the survey following the direct e-mail. Ten duplicate cases and 13 cases that included invalid responses were removed from the data set, leaving 797 valid surveys. An estimated response rate of 9% was based on the somewhat ambiguous 'active account' denominator of 9,000.

The sample was 55% men, 56% were aged over 45 years, 75% were married, 57% worked full time, 42% were tertiary educated, 71% had lived at their current address for more than four years and had an average body mass index of  $28 \pm 8$ . The average number of computer users per household was  $3 \pm 1$ ; more than half of the respondents used the local ISP as their Internet home page.

Some 58% of respondents reported usually setting aside time during the day to do some physical activity, and 64% were in the action or maintenance stages of motivational readiness. Preferred sources of assistance or advice on how to be more active are shown in Figure 1.

Of those who reported a preference for program delivery via

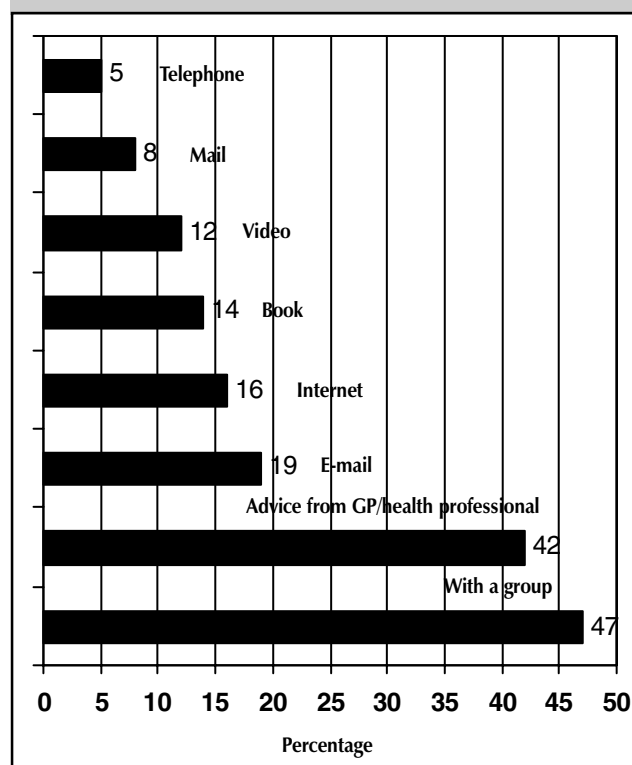
the Internet, e-mail or both (35% overall), 48% were men, 55% were aged 45 years or older (including 8% aged over 65 years). Most were married (71%), working full time (61%) and more than one-third (36%) were insufficiently active according to the stages of motivational readiness.

Thirty-six per cent were extremely or very interested in a website with community-specific information about physical activity, 37% were somewhat interested, 14.4% were slightly interested and 12.5% were not at all interested. Furthermore, 57% of participants consented to being recontacted via e-mail about future research projects.

## Discussion

A large number of people responded to the online survey. However, while the number was large in an absolute sense, the estimated response rate was low. It is likely that the actual response rate was somewhat higher, as was the case in a previous trial where upon inspection and ratification of the 3,156 e-mail accounts initially identified, over half were not current or belonged to help lines or group lists.<sup>11,12</sup> However, even doubling the current response rate would indicate that reaching representative samples using the Internet remains a challenge. Future surveys might try to isolate active e-mail accounts by identifying those that send or receive a certain volume of e-mail each week, to obtain a potentially more accurate denominator.

**Figure 1: Preferred sources of assistance, help or advice on how to be more physically active (% add up to more than 100% as participants could select more than one preference)**



In this study, a better response was obtained from the more direct method of recruitment (via direct e-mail with a hyperlink to the survey) as opposed to the indirect approach of e-newsletter advertising. The value of the incentive as a means of encouraging people to respond to the survey was not evaluated, although intuitively it appears to be a useful method for gaining initial attention and interest. A limitation of this study was the short time frame for survey response; a number of potential participants, who accessed their e-mail only irregularly, may have missed the opportunity.

There was a strong preference for being active with a group (47%), closely followed by advice from a GP or health professional (42%). These preferences are consistent with data collected in the early 1990s.<sup>13</sup> Few of those in this earlier study reported a preference for advice to be delivered via the telephone or mail (<5%).<sup>13</sup> Data from this online survey indicate a slightly higher preference for advice being delivered via telephone and mail, but more than one-third of participants indicated they would like a program regarding physical activity to be delivered via e-mail or the Internet. In addition, more than 70% indicated they would like to have access to a website that gave them specific information and ideas on how to be active in their local community. Thus, health promotion professionals should explore the potential of this physical activity promotion strategy.

One of the main limitations of using Internet technology to promote health behaviour change is the fact those most in need may be less likely to be accessing health information online.<sup>14</sup> Most of our respondents were employed full time and just under half had a tertiary education, although more than one-third were insufficiently active. This limitation may diminish over time as the reach of electronic communication expands across socio-demographic groups and the disparity of access decreases.<sup>14</sup> The challenge is for health promotion practitioners and researchers to learn more about how to use the technology to its full potential, as it becomes a more ubiquitous method of communication in domestic and community life.

## Conclusion

A large number of potential respondents could be approached and several hundred responded to our online survey on physical activity program preferences. The majority of respondents were somewhat to extremely interested in receiving physical activity information via the Internet and/or e-mail. The challenge will be to develop this medium to expand its reach and appeal.

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