

Original Research Paper

Using computers to screen adolescent substance use

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ABSTRACT

The study aim was to assess the feasibility of self-administered computerised screening of adolescents in general practice for substance use and compare methods of recruitment. Patients aged 15-17 years (385) were randomly allocated to one of three study recruitment groups, ie, a written invitation to attend for a computerised lifestyle assessment (CLA), the opportunity to complete the assessment while present at the surgery, or a personal invitation while attending the surgery to make a return appointment. Some 225 (58 per cent) adolescents attended the surgery over the six-month study period. The CLA was completed by 45 patients and 38 (84 per cent) discussed the report with a practice nurse. The most successful recruitment method was personal invitation. Cigarette use was identified in 17 (38 per cent) patients screened, alcohol use identified as hazardous or problem drinking in 12 patients (27 per cent), and cannabis use in eight patients (18 per cent).

Key points

- Substance use among adolescents is an important health and social concern
- The computerised lifestyle assessment (CLA) is a well-researched screening tool which includes substance use assessment
- There was a low response to mailed invitations
- Over half of registered 15 to 17-year-olds attended the group practice over the six-month period
- Those who accepted an invitation to complete a computerised lifestyle assessment preferred to return for the appointment

INTRODUCTION

Substance use among adolescents has been identified as an important health and social concern and requires a variety of strategies to reduce potentially serious problems. A recent study screening in Auckland general practices has reported the high prevalence of risky and

problem drinking among young people¹ confirming earlier data from the Christchurch Psychiatric Epidemiology Study.² The recent report from the Dunedin Multidisciplinary Study highlighted the prevalence of substance use and associated problems among young New Zealanders.³ In this study smoking is identified as a strong influence to other drug use. Smoking tobacco, drinking alcohol and cannabis use have been identified as inter-related behaviours. A significant proportion of cannabis users go on to develop dependence and the relationship of cannabis use to unemployment and violence is highlighted.⁴ Substance use disorders have been identified in over one-third of young people making serious suicide attempts in New Zealand⁵ and the comorbid association of substance use with other mental health disorders is well recognised.⁶

Primary preventive strategies include population-based health education in a variety of settings including media and school-based programmes.⁷ Secondary prevention and early intervention strategies aim to provide personalised information and management for individuals. General practice has been advocated as a valuable point of delivery for both health education/promotion and early intervention. The need for a systematic approach to detect those individuals who would most benefit has been identified.⁸ Recent national reports have endorsed the role of general practice in substance use screening and management.^{9,10}

Systematic screening as part of an adult health check programme has been shown to detect general practice patients at risk or with problems relating to alcohol use.¹¹ Reports of adolescent health checks suggest that general practice is an appropriate setting for comprehensive health and lifestyle assessment.¹² Computer-based assessment seems particularly suited to screening this age group.^{13,14}

The use of a computer may improve the accuracy of answers to questions concerning substance use, both by reducing the effect of socially desirable answers and by providing an opportunity for more detailed assessment.^{15,16}

The use of computers in screening for substance use problems has been reported in a number of settings.¹⁷⁻¹⁹ A RNZCGP Research Unit study identified a number of important issues affecting the use of computerised screening in general practice including the potential for disruptions to the appointment system, difficulties faced by receptionists in setting up the computer checks, and software problems/computer breakdowns _ all essentially problems to do with disrupted practice routines. Nevertheless, the value of the computer

checks was also identified and included the quick and efficient method of assessment, the relevance of immediate feedback and capacity for calculation of health risks, and the non-use of clinical time.²⁰

Inadequate time and reimbursement issues have been identified as disincentives for screening by New Zealand GPs, who perceive themselves as working in a system generally not supportive of preventive activities.²¹ Computerised screening may provide an effective means of providing at least part of this service at low cost and without the requirement for face-to-face interviewing.

For computerised screening to become an effective means of screening substance use in younger adults in general practice, issues to be addressed include:

- the method of recruitment
- the setting for completing the screening assessment
- resolving technical problems related to using the computer
- producing and/or discussing the computer report.

Recruitment is an important step in a screening programme though little information is available on which method is most suited to adolescents. An attendance rate of 50 per cent was achieved with a single invitation to adolescents in one UK general practice study²² and 73 per cent with up to three invitations in another general practice study of teenage patients.¹² Initial recruitment of adults has generally been more successful when attendance is requested by personal rather than mailed invitation^{23,24} and evidence from randomised controlled studies supports the effectiveness of computer-based reminder systems which prompt the doctor to offer preventive services.^{25,26}

METHOD

The study included all 385 patients aged 15-17 years registered with four doctors in an associate group general practice in Wanganui over the study period of six months, randomly allocated to one of three recruitment groups.

- Group 1 patients (135) received a written invitation to make an appointment for a computerised lifestyle assessment (CLA) at a time suitable to themselves.
- Group 2 patients (122) were offered the opportunity to complete the check while present at the surgery for an unrelated reason.
- Group 3 patients (128) were offered a personal invitation while attending the surgery to make a return appointment for the assessment.

The invitation included an opportunity to complete a free, computerised

lifestyle assessment¹⁴ with optional follow-up discussion with the practice nurse. The invitation letter was developed with support from an agency experienced in advertising for young people and was posted initially with an explanatory letter to the parents of Group 1 patients, then subsequently to the adolescent patients directly. The same letter was used as part of the explanation of the assessment for Group 2 patients and personally given to Group 3 patients with an invitation for a return appointment.

Patient details were entered onto the computer by the practice nurse and the patient left to complete the questionnaire in private. The programme included assessment of nutrition and eating habits, weight, physical activity and sleep, social and family relationships, use of caffeine, cigarettes, alcohol and cannabis, medical and dental care, motor vehicle safety, work and leisure and emotional health. The substance

Computer-based assessment seems particularly suited to screening this age group use questions identified current use and included assessment of problems and dependency for those at risk. Each section provided personalised computer feedback and on completion a summary and detailed report was printed by the nurse who was available for an optional discussion of the results. A review of clinical issues was arranged with the doctor if agreed.

RESULTS

Over the six-month period, of the 385 15-17 year olds in the study group, 225 (58 per cent) attended the surgery at least once and 158 (41 per cent) more than once. The CLA was completed by 45 patients, eight from Group 1, 17 from Group 2, and 20 from Group 3. Analysis of the 17 Group 2 patients showed only six completed an opportunistic CLA and the other 11 patients responded to the opportunistic invitation by arranging a return appointment.

The letter recruitment rate for the 135 patients sent an invitation was 6 per cent. The opportunistic recruitment rate for the 64 Group 2 patients who attended the surgery over six months was 9 per cent, and the arranged recruitment rate for the 70 Group 3 patients who attended was 29 per cent. Of the 45 patients completing an assessment, 38 (84 per cent) chose to discuss the findings with the practice nurse, and six (13 per cent) had doctor follow-up arranged.

Cigarette use was identified in 17 (38 per cent) of patients screened, alcohol use identified as hazardous or problem drinking in 12 patients (27 per cent), and cannabis use in eight patients (18 per cent).

DISCUSSION

The surgery attendance of more than half the target group over a six-month period suggests that general practice could provide sufficient

opportunity for screening young people. Recruitment by letter was notably unsuccessful, in spite of efforts to provide the invitation in a format designed to be acceptable to this age group. Opportunistic screening was also relatively unsuccessful, with the majority of those offered the opportunity to complete the assessment during their current attendance choosing to return to a later appointment. Most successful was recruitment by return appointment, with 29 per cent of those from this group who attended over the six-month study period completing the assessment.

The practice nurse was perceived as an appropriate person with whom to discuss the findings of the assessment by the majority of participants, with follow-up by the doctor necessary for a small group only. Substance use was identified as an important health issue for a number of participants.

Possible concerns about computerised screening were not a problem in practice. Any disruption to the appointment system was minimised by the preference for planned appointments. The computer programme was set up with minimal requirements by a practice nurse rather than receptionist, and the few minor problems relating to software were easily solved.

A review by the clinical staff involved in this feasibility study identified several areas which require development prior to continuing the screening programme.

The value of an information letter to prime for later personal invitation requires assessment. The computerised doctor reminder prompts could be simplified to encourage all patients in the selected age group to be personally invited. The availability of an updated version of the CLA may require hardware upgrade. The practice nurse training needs were identified, including skills related to assessment of positive findings and initial management of the substance use problems identified. Future audit could include a measure of outcomes from the screening project.

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