INTRODUCTION

Primary care health providers have been charged with the responsibility of identifying and intervening with patients whose drinking is hazardous or harmful to their health (Babor and Higgins-Biddle, 2001). Screening and brief intervention (SBI) for alcohol consumption among patients in primary health care provides an opportunity to educate patients about the risks of hazardous and harmful alcohol use. Information about the amount and frequency of alcohol consumption may inform the diagnosis of the patient’s presenting condition, and it may alert clinicians to the need to advise patients whose alcohol consumption might adversely affect their use of medications and other aspects of their treatment. Of utmost importance for SBI programmes is the fact that people who are not dependent on alcohol may reduce or stop their alcohol consumption with appropriate assistance and effort. Once dependence has developed, reducing or stopping alcohol consumption is more difficult and often requires specialized treatment.

Although SBI programmes are effective (Moyer et al., 2002), with very favourable benefit–cost ratios (Fleming et al., 2002), primary care health workers commonly report that they are reluctant to screen and advise patients in relation to alcohol use (Roche and Richard, 1991; Roche et al., 1991, 1996; Richmond and Mendelsohn, 1996; McAvoy et al., 1999; Kaner et al., 1999a; Cornuz et al., 2000; Aalto et al., 2001; Kaariainen et al., 2001). Among the reasons most often cited are lack of time, inadequate training, fear of antagonizing patients, the perceived incompatibility of alcohol brief intervention with primary health care, and the belief that those who are dependent on alcohol do not respond to interventions.

A meta-analysis of interventions to engage general practitioners (GPs) in the management of alcohol problems found significant increased effects for the intervention group compared with the control group of between 8% and 18% (Anderson et al., 2004). General practitioners who report that they manage more patients with alcohol problems express increased role security and therapeutic commitment in their role as measured by the Short Alcohol and Alcohol Problems Perception Questionnaire (Anderson and Clement, 1987; Anderson et al., 2003). Role security measures role adequacy, for example ‘I feel I can appropriately advise my patients about drinking and its effects’; and role legitimacy, for example, ‘I feel I have the right to ask patients questions about their drinking when necessary’. Role insecurity is expressed at the emotional level as therapeutic commitment which measures motivation, for example ‘pessimism is the most realistic attitude to take toward drinkers’; task-specific self-esteem, for example, ‘all in all I am inclined to feel I am a failure with drinkers’; and work satisfaction, for example, ‘in general, it is rewarding to work with drinkers’. Thus, it is important to investigate the extent to which general practitioners’ attitudes moderate the relationship that support and training can have on delivering screening and brief alcohol interventions. Acting as moderators, role security and therapeutic commitment could affect both the strength and the direction of the relationships between support and training and screening and brief intervention rates (Baron et al., 1986). It has also been proposed that providing support and training and the experience of SBI would in turn lead to strengthened role security and increased therapeutic commitment (Shaw et al., 1978).
This paper reports on additional analysis of data from a World Health Organization (WHO) collaborative randomized controlled trial which demonstrated the effectiveness of training and support in promoting SBI screening and brief intervention by GPs for hazardous and harmful alcohol consumption (Gomel et al., 1998; Kaner et al., 1999b; Funk et al., 2003). Two questions are asked: (i) do existing role security and therapeutic commitment moderate the relationship between support and increased screening and brief intervention? and (ii) do the provision of support, and undertaking SBI, lead to strengthened role security and therapeutic commitment over time and, if so, are the relationships moderated by existing role security and therapeutic commitment?

METHODS

The data utilized were from Australia, Belgium, Catalonia and England, and compared the impact of a high training and support group with a control group and also provided measurements of role security and therapeutic commitment of GPs.

The screening and brief intervention programme

The SBI programme, ‘Drink-less’ (Gomel et al., 1994), based on a package of proven efficacy (Babor et al., 1992), was translated and adapted for each participating country. Physicians and receptionists were asked to screen all eligible patients (patients aged 16 years of age and over who were not repeat attendees, who were well enough to complete the questionnaire, and who understood the native language of the country) using the WHO’s AUDIT Questionnaire (Saunders and Aasland, 1987; Babor et al., 2001) or a modification of this (Degenhardt et al., 2001). The study design required receptionists to hand out screening questionnaires while patients waited to see the physician, and then to place a sticker on the patient’s medical record to prevent repeat screening. Receptionists and physicians kept a tally of the number of patients who were not screened.

During the consultation, physicians scored the AUDIT questionnaires with a template to identify at-risk patients, using a cut-off score of 8 or more. Brief advice of 5–10 min was provided to at-risk patients using an advice card designed specifically for the study. Patients were given a self-help booklet that reinforced the advice. Carbon copies of completed screening questionnaires were collected to calculate the numbers of hazardous drinkers. The questionnaires included a section for the physician to record whether a patient had been advised and/or given a self-help booklet. At the end of the 12 week intervention period unused program materials were counted to verify the SBI rates (see below), blind to which support group the GP was allocated.

General practitioners and their allocation to the training and support and control groups

The GPs were random samples selected from databases of practitioners maintained by national or regional health authorities or by academies and associations of GPs who had requested and agreed to use an alcohol SBI program in an earlier trial (Funk et al., 2003). This trial, which had randomly selected 2924 GPs from the databases of practitioners, evaluated the effectiveness of three different marketing conditions (direct-mail, tele-marketing and academic detailing) in promoting the dissemination of the program. Of the 2924 GPs, 1366 (47%) requested the SBI programme, and 632 (22%) agreed to use the programme (46% of those who had requested the programme). Request and programme use were higher for the academic detailing and tele-marketing groups than for the direct mail group (Funk et al., 2003). Of the 632 GPs who agreed to use the programme, 340 were randomly allocated either to a training and support (intervention) group (n = 172) or to a control group (n = 168), stratified by previous marketing condition and blind to the knowledge of the individual practitioner. The remaining 292 GPs were allocated to other support groups less intensive than the training and support group and not used by all four countries. Only one GP per practice was selected. The random selection of GPs and the random allocation to the intervention or control group occurred either via the use of random number tables and/or computer-based using random sample generation (e.g. SPSS).

In the control group, the package, containing written guidelines for implementation and the collection of research data, was either dropped-off or mailed to each practice without demonstration or ongoing training or support. In the training and support (intervention) group, both physicians and receptionists received initial outreach training in the implementation of the program. Use of the programme materials was demonstrated and procedures for collecting research data were detailed. They were provided with ongoing support and advice regarding program implementation issues via alternate fortnightly telephone calls and visits throughout the 12-week study period. Outreach training and ongoing support addressed a range of problems likely to be encountered during programme implementation. These included: attitudes and beliefs of the physician and receptionists (e.g. motivation and self-efficacy); patient intervention issues (e.g. difficulties with raising the topic of alcohol and negative patient reactions); structural/logistic issues (e.g. time constraints and other commitments); and practical suggestions for screening and counselling.

Screening and brief intervention rates

SBI rates were calculated blind as to whether the GP had been allocated to intervention or control. The screening rate for each GP was the number of patients screened during the 12-week intervention period divided by the number of patients eligible for screening (as defined above) ×100. The brief intervention rate for each GP was the number of patients advised or given a self-help booklet during the 12-week intervention period divided by the total number of hazardous drinkers ×100. The number of hazardous drinkers was identified independently by researchers from the results of the AUDIT questionnaire, using a cut-off score of 8 or more.

Both screening and brief intervention rates were highly skewed, with large proportions of general practitioners scoring zeros. The median value of the screening rate was 7.5% and of the brief intervention rate 2.8%. It was decided to dichotomize the sample into those with low activity (<20% for screening and <10% for brief intervention) and those with high activity (≥20% for screening and ≥10% for brief intervention). A screening rate of 20% means, for an individual GP, that 20%...
of eligible patients were screened and a brief intervention rate of 10% means that 10% of at-risk patients were advised or given a self-help booklet. Dichotomization was used to overcome the problem of skewness and to prepare the data (as dependent variables) for logistic regression analysis. It was decided to base the point of dichotomization on screening and intervention rates that might have clinical meaning and to result in an allocation in which approximately two thirds of the total sample of GPs were in the low activity groups and one third in the high activity groups. Varying the point of the dichotomization such that approximately two thirds of the total sample of GPs were in the high activity groups made no overall difference to the findings.

**Role security and therapeutic commitment**

Role security and therapeutic commitment were measured by responses to the SAAPPQ. The SAAPPQ is a validated instrument based on factor analysis (Anderson and Clement, 1987) of the original alcohol and alcohol problems perception questionnaire developed and validated by Cartwright (1980). The questionnaires were handed to the GPs at their place of work, where they were completed at baseline prior to the commencement of the study, and 3 months after the end of the study (6 months post baseline). The questionnaire asks the GP to indicate agreement to each of 10 statements on a 7-point Likert scale from 7 (strongly agree) to 1 (strongly disagree). The responses were summed within the two scales of role security and therapeutic commitment, as described above. Individual missing values for any of the items in a domain were assigned the mean value of the remaining items of the domain before summation. GPs were dichotomized by the median value at baseline into those with higher or lower role security (the top three items of the 7-point scale representing positive views versus the bottom four items representing negative views) and higher or lower therapeutic commitment (the top four items of the 7-point scale representing positive views versus the bottom three items representing negative views). Dichotomization was used to prepare the data (as dependent variables) for logistic regression analysis.

GPs were also dichotomized into those with higher or lower role security and higher or lower therapeutic commitment by the median value at 6-month follow-up, and into those with increased role security and therapeutic commitment between baseline and 6-month follow-up and those with not.

**Analysis**

The whole dataset was combined and analyzed at the level of the individual general practitioner. Multilevel logistic regression analyses were used to calculate odds ratios (OR) with 95% confidence intervals, with country as a nesting random factor, using SAS v6.12, macro:glmmix. The gender and the age of the general practitioner were entered in the regression analyses. Interactions were tested and sub-group analyses performed to study the moderating impacts of baseline role security and therapeutic commitment.

**RESULTS**

The distribution of the variables by country is shown in Table 1.

Approximately one fifth of GPs in the control group scored high on SBI rates, whereas approximately two fifths of the general practitioners in the training and support group scored high on SBI rates. Whilst over two thirds (69.9%) of the total sample of GPs felt role secure, less than one fifth (16.4%) felt therapeutically committed. Calculations of the intra-class correlations estimated that 13.7% of the variance in screening rates, 22.2% of the variance in brief intervention rates and 12.3% of variance in expressed role security and therapeutic commitment were explained by the country or region of the general practitioner.

Of the 277 out of 340 GPs (81.5%) who completed the measure of role security and therapeutic commitment at baseline, 149 (54%) completed the scales 3 months after the end of the intervention period (6 months following the baseline measurement). A higher proportion of GPs with higher role security (67%) completed the 6-month follow-up questionnaire than GPs with lower role security (42%) ($\chi^2 = 15.7, P < 0.001$). The difference between those with higher therapeutic commitment (60%) and lower therapeutic commitment (52%) was not significant ($\chi^2 = 1.64, P = 0.124$). Whereas the difference in the proportion of GPs who completed the 6-month follow-up questionnaire between the training and support group (60%) and the control group (52%) was not significant, ($\chi^2 = 2.01, P = 0.098$), a higher proportion of GPs in the high screening (76%) and high brief intervention (70%) groups completed the 6-month follow-up questionnaire than general practitioners in the low screening (46%) ($\chi^2 = 20.64, P < 0.001$) and low brief intervention (48%) ($\chi^2 = 12.0, P < 0.001$) groups.

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**Table 1. Variables by country**

<table>
<thead>
<tr>
<th>Country/region</th>
<th>GPs (n)</th>
<th>In training and support group (%)</th>
<th>Control group (%)</th>
<th>Training and support group (%)</th>
<th>Control group (%)</th>
<th>Training and support group (%)</th>
<th>Scoring high on screening rates (%)</th>
<th>Scoring high on brief intervention rates (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>76</td>
<td>55.3</td>
<td>32.4</td>
<td>59.5</td>
<td>26.5</td>
<td>61.9</td>
<td>85.5</td>
<td>19.7</td>
</tr>
<tr>
<td>Belgium</td>
<td>129</td>
<td>46.5</td>
<td>17.4</td>
<td>25.0</td>
<td>16.3</td>
<td>40.5</td>
<td>50.5</td>
<td>11.4</td>
</tr>
<tr>
<td>Catalonia</td>
<td>50</td>
<td>56.0</td>
<td>22.7</td>
<td>53.6</td>
<td>23.2</td>
<td>31.7</td>
<td>74.0</td>
<td>16.0</td>
</tr>
<tr>
<td>England</td>
<td>85</td>
<td>49.4</td>
<td>16.3</td>
<td>28.6</td>
<td>27.3</td>
<td>57.1</td>
<td>81.8</td>
<td>21.8</td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
<td>50.6</td>
<td>20.8</td>
<td>39.0</td>
<td>22.6</td>
<td>45.3</td>
<td>69.9</td>
<td>16.4</td>
</tr>
</tbody>
</table>

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Training and support

1.1 (0.5 therapeutic commitment; with low baseline role security and in the presence of high baseline role security and high baseline therapeutic commitment were not. Training and support only associated with increased SBI rates (Table 2), baseline role security and therapeutic commitment were not.

Whereas training and support was associated with increased brief intervention rates? Do existing role security and therapeutic commitment affect the relationship that training and support has on screening and brief intervention rates?

The findings demonstrated that GPs’ initial attitudes affected the relationship that training and support had on increased SBI. Further, initial attitudes affected the relationships that training and support and SBI had on subsequent changes in attitudes. Training and support only increased SBI rates for those who were already role secure and therapeutically committed. Providing support did not improve subsequent role security and therapeutic commitment and, for those who were already role insecure and therapeutically uncommitted, actually made their role security and therapeutic commitment lower.

DISCUSSION

Table 2. Odds ratios (95% CI) for the impact of the independent variables, training and support, baseline role security and baseline therapeutic commitment on high screening and high brief intervention rates*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>High screening rates ( n = 277 )</th>
<th>High brief intervention rates ( n = 277 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and support</td>
<td>2.2 (1.3–3.1)</td>
<td></td>
</tr>
<tr>
<td>Baseline role security</td>
<td>1.4 (0.8–2.0)</td>
<td></td>
</tr>
<tr>
<td>Baseline therapeutic commitment</td>
<td>0.9 (0.5–1.3)</td>
<td>0.7 (0.4–1.1)</td>
</tr>
</tbody>
</table>

*Separate multilevel logistic regression analyses for each independent variable on its own with country as random nesting factor.

Table 3. Odds ratios (95% CI) for the impact of training and support on screening and brief intervention rates in the presence of high and low baseline role security and high and low baseline therapeutic commitment*

<table>
<thead>
<tr>
<th>Increased role security</th>
<th>Increased therapeutic commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline role security</td>
<td>Baseline therapeutic commitment</td>
</tr>
<tr>
<td>Training and support</td>
<td>High 0.2 (0.03–0.4)</td>
</tr>
<tr>
<td>High 2.0 (0.8–3.2)</td>
<td>High 0.5 (0.1–0.9)</td>
</tr>
<tr>
<td>High 1.1 (0.4–1.8)</td>
<td>1.2 (0.4–2.0)</td>
</tr>
<tr>
<td>High 0.5 (0.1–0.9)</td>
<td>0.8 (0.2–1.4)</td>
</tr>
<tr>
<td>High 1.8 (0.7–2.9)</td>
<td>1.0 (0.4–1.6)</td>
</tr>
</tbody>
</table>

*Separate multilevel logistic regression analyses for each independent variable on its own with country as random nesting factor.

Do training and support and undertaking screening and brief intervention lead to increased role security and therapeutic commitment over time?

For GPs with high role security and therapeutic commitment at baseline, the odds ratios for having high role security at 6-month follow-up was 0.6 (95% CI = 0.25–0.95) and for therapeutic commitment was 0.6 (95% CI = 0.3–0.9). Neither training and support nor high SBI rates were associated with increased role security and therapeutic commitment at 6-month follow-up (Table 4).

The baseline level of role security and therapeutic commitment affected the relationships that training and support and high SBI rates had with increased role security and therapeutic commitment at 6-month follow-up (Table 5).

Table 4. Odds ratios (95% CI) for the impact of the independent variables, training and support, high screening rates and high brief intervention rates on increased role security and increased therapeutic commitment at 6-month follow-up*

<table>
<thead>
<tr>
<th>Baseline role security</th>
<th>Increased role security at 6-month follow-up ( n = 149 )</th>
<th>Increased therapeutic commitment at 6-month follow-up ( n = 149 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and support</td>
<td>1.1 (0.5–1.7)</td>
<td>0.8 (0.4–1.2)</td>
</tr>
<tr>
<td>High screening rates</td>
<td>1.2 (0.5–1.9)</td>
<td>1.5 (0.7–2.3)</td>
</tr>
<tr>
<td>High brief intervention rates</td>
<td>1.0 (0.5–1.5)</td>
<td>1.0 (0.5–1.5)</td>
</tr>
</tbody>
</table>

*Separate multilevel logistic regression analyses for each independent variable on its own with country as random nesting factor.

Table 5. Odds ratios (95% CI)* for the impact of training and support, high screening rates and high brief intervention rates on increased role security and therapeutic commitment at 6-month follow-up in the presence of high and low baseline role security and high and low baseline therapeutic commitment

<table>
<thead>
<tr>
<th>Baseline role security</th>
<th>Increased role security</th>
<th>Increased therapeutic commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and support</td>
<td>Low 0.2 (0.03–0.4)</td>
<td>Low 0.5 (0.1–0.9)</td>
</tr>
<tr>
<td>High 2.0 (0.8–3.2)</td>
<td>High 1.2 (0.4–2.0)</td>
<td></td>
</tr>
<tr>
<td>High screening rates</td>
<td>Low 2.2 (0.5–3.9)</td>
<td>Low 0.8 (0.2–1.4)</td>
</tr>
<tr>
<td>High 0.8 (0.4–1.8)</td>
<td>1.9 (0.7–3.1)</td>
<td></td>
</tr>
<tr>
<td>High brief intervention rates</td>
<td>Low 0.5 (0.1–0.9)</td>
<td>Low 0.8 (0.2–1.4)</td>
</tr>
<tr>
<td>High 1.8 (0.7–2.9)</td>
<td>1.0 (0.4–1.6)</td>
<td></td>
</tr>
</tbody>
</table>

*Separate multilevel logistic regression analyses for each independent variable on its own with country as random nesting factor.
worse. The experience of SBI did not increase role security and therapeutic commitment. For those who were already role insecure, the experience of brief interventions actually made role security worse.

The strength of the present analysis lies in the fact that it includes objective reported outcome measures for SBI rates from a large number of GPs (340) across four countries and regions. The analysis allowed for the inference of paths of causality. Role security and therapeutic commitment and the provision of training and support were measured prior to the measurement of SBI rates. Data were collected on screening and brief intervention rates for all participating GPs. There were subsequent measurements of role security and therapeutic commitment after the training and support intervention and the experience of SBI. However, only 54% of the GPs completed the attitudes questionnaire at 6-month follow-up. GPs who completed the questionnaire were more likely to have higher role security and to be more active in screening and brief intervention than GPs who did not complete the questionnaire. This suggests that the negative impact of training and support on GPs with low role security and therapeutic commitment at baseline might have been greater had all the GPs been followed up.

In general, the sample was less secure in their role and less therapeutically committed than the similar, but much larger, sample of GPs across nine countries analyzed in earlier survey-based work from the World Health Organization collaborative study (Anderson et al., 2003b). The GPs undertook little activity for the management of alcohol problems, with as little as one in five of the control group (most equivalent to normal general practice) screening ≥20% of their patients and advising ≥10% of their at-risk patients.

In the present study, although providing training and support did increase SBI rates, its full potential was not realized, probably because the emotional responses of the GPs were not addressed. In the training and support group, GPs received initial training in the use of the programme with a practice based visit, together with ongoing advice and support on programme implementation issues addressing the attitudes and beliefs of the GPs, patient intervention issues and structural and logistic issues. It is difficult to judge the quality of the interventions that future research and programme development support will not achieve its full potential. This should be an approach that future research and programme development should bear in mind.

REFERENCES


