

Postcards from the EDge project: randomised controlled trial of an intervention using postcards to reduce repetition of hospital treated deliberate self poisoning

Gregory L Carter, Kerrie Clover, Ian M Whyte, Andrew H Dawson, Catherine D'Este

Abstract

Objective To determine whether an intervention using postcards (postcards from the EDge project) reduces repetitions of hospital treated deliberate self poisoning.

Design Randomised controlled trial.

Setting Regional referral service for general hospital treated deliberate self poisoning in Newcastle, Australia.

Participants 772 patients aged over 16 years with deliberate self poisoning.

Intervention Non-obligatory intervention using eight postcards over 12 months along with standard treatment compared with standard treatment alone.

Main outcome measures Proportion of patients with one or more repeat episodes of deliberate self poisoning and the number of repeat episodes for deliberate self poisoning per person in 12 months.

Results The proportion of repeaters with deliberate self poisoning in the intervention group did not differ significantly from that in the control group (57/378, 15.1%, 95% confidence interval 11.5% to 18.7% *v* 68/394, 17.3%, 13.5% to 21.0%: difference between groups -2%, -7% to 3%). In unadjusted analysis the number of repetitions were significantly reduced (incidence risk ratio 0.55, 0.35 to 0.87).

Conclusion A postcard intervention reduced repetitions of deliberate self poisoning, although it did not significantly reduce the proportion of individual repeaters.

Introduction

Deliberate self poisoning is common, accounting for 5% of admissions to general hospitals in Australia.¹ In the United Kingdom, deliberate self harm is one of the top five reasons for acute medical admissions.² Repetition of deliberate self poisoning is also common, ranging from 6% to 30% in 12 months² and is strongly associated with subsequent suicide. Three non-pharmacological interventions were effective in reducing repetition in selected subsets of populations with deliberate self harm,³⁻⁵ but interventions are needed that could be economically delivered to the entire population of patients who deliberately self harm.

We tested the efficacy of a postcard intervention (postcards from the EDge project) over 12 months on repetition of hospital treated deliberate self poisoning.

Methods

All patients presenting with poisoning in the greater Newcastle region, New South Wales, Australia, are admitted to the Hunter Area Toxicology Service or notified to the service and entered prospectively into a clinical database.⁶ The psychiatry department of the Newcastle Mater Hospital sees all of them for assessment and diagnosis, and to determine discharge destination and follow-up. Potentially eligible participants were those aged over 16 years who presented with deliberate self poisoning between April 1998 and December 2001. See bmj.com for exclusion criteria.

Our two dependent variables were the proportion of patients with at least one repeat episode of deliberate self poisoning in 12 months and the number of repeat episodes of deliberate self poisoning per individual over 12 months. See bmj.com for details of the descriptive variables analysed.

We used a randomised consent design, using the single consent version (Zelen design)^{7,8} where participants are randomised to control or intervention before consent is sought (see bmj.com for details). We assessed the outcomes by an intention to treat analysis on the basis of allocation.

Our intervention comprised a postcard inviting participants to contact the hospital, sent in a sealed envelope at 1, 2, 3, 4, 6, 8, 10, and 12 months after discharge (see postcard on bmj.com).

We calculated that a sample size of 800 participants would be adequate to detect differences in the proportion of participants with any deliberate self poisoning of 7-9% (80% power) and 8-10% (90% power and 5% significance level), which we considered would represent a clinically significant reduction. (See bmj.com for further details.)

We compared the risk of deliberate self poisoning events per individual in the intervention group with

Editorial by Hatcher

Suicide Prevention Research Unit, Centre for Mental Health Studies, Faculty of Health, University of Newcastle, Newcastle, Australia
Gregory L Carter
head

Kerrie Clover
conjoint senior lecturer

Discipline of Clinical Pharmacology, University of Newcastle, Australia
Ian M Whyte
conjoint professor

Andrew H Dawson
conjoint professor

Centre for Clinical Epidemiology and Biostatistics, University of Newcastle, Australia
Catherine D'Este
associate professor

Correspondence to: G Carter, Department of Consultation-Liaison Psychiatry, Locked Bag No 7, Hunter Region Mail Centre, NSW 2310, Australia
gregory.carter@newcastle.edu.au

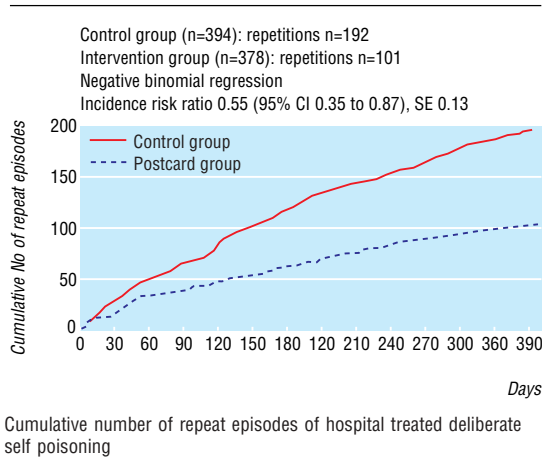
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The postcard is on bmj.com



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that in the control group using negative binomial regression. As we found a difference between the sexes, we undertook subgroups analyses of treatment effect for men and women, using negative binomial models.

Results

We excluded 150 of 922 patients (16%) assessed for eligibility to our study, leaving 772 participants—394 in the control group and 378 in the intervention group. (See [bmj.com](#) for the characteristics of the participants at baseline and flow of participants through the trial.) Overall, 129 of 772 (17%) participants had a previous episode of hospital treated deliberate self poisoning: 66 of 394 (17%) in the control group and 63 of 378 (17%) in the intervention group. Poisonings were classified as pharmaceuticals only (473, 61%), pharmaceuticals plus alcohol (217, 28%), opioid or amphetamine (20, 3%), carbon monoxide (17, 2%), herbicide or rodenticide (11, 1%), insulin (7, 1%), any deliberate self harm with deliberate self poisoning (23, 3%), and unknown (4, 1%).

We found no differences between groups in the proportion of patients with repetitions of deliberate self poisoning. (15.1 v 17.3%, $P = 0.41$). The cumulative of repeat episodes was 192 in the control group and 101 in the intervention group (figure).

The risk of repetition was statistically significantly lower in the intervention group than in the control group (incidence risk ratio 0.55, 95% confidence interval 0.35 to 0.87; table). Although we found no

Negative binomial models for intervention effect on number of repeat episodes of deliberate self poisoning and for subgroup analyses by sex

	Incidence risk ratio	SE (95% CI)	Z value*	P value*
Group (unadjusted)				
Control	1.00			
Postcards	0.55	0.13 (0.35 to 0.87)	-2.56	0.010
Subgroup analyses				
Men (n=247):				
Control	1.00			
Postcards	0.97	0.35 (0.48 to 1.98)	-0.08	0.937
Women (n=524):				
Control	1.00			
Postcards	0.54	0.16 (0.30 to 0.96)	-2.09	0.037

*Wald test.

significant interaction between treatment and sex, retrospective analyses of subgroups by sex showed that the treatment was effective for women (0.54, 0.30 to 0.96) but not for men (0.97, 0.48 to 2.0). See [bmj.com](#) for repetitions of deliberate self poisoning by allocated group and sex.

Discussion

A simple intervention comprising a postcard sent to patients at intervals after discharge for an episode of deliberate self poisoning nearly halved the number of repeat episodes in 12 months. Although the intervention did not reduce the proportion of individual repeaters, it did reduce the number of events per patient.

Limitations of the study

Our study had some limitations and caution is needed when interpreting the results. Fewer than 20% of the participants had any repeat episodes of deliberate self poisoning, and a subgroup of repeaters had a highly skewed pattern of more than one repeat episode. It is not known to what extent our population and model of clinical service⁹ would be generalisable to other settings. As we studied patients with deliberate self poisoning, the results cannot be generalised to patients with other forms of deliberate self harm.

The estimate of efficacy of treatment effect may have been conservative for three reasons: 20 control participants were inadvertently exposed to the intervention, 76 intervention participants did not consent to receive the intervention, and 32 intervention participants were not exposed to the intervention.

Implications of the study

The control group occupied hospital beds for 239 days (192 repetitions) compared with 129 days (101 repetitions) in the intervention group, a total of 110 bed days saved. The costs of stationery, post, maintenance of a mailing database, and staff time were estimated to be less than \$A15 (£6.25; \$11.52; €9.19) per participant.

The difference in total repetitions for deliberate self poisoning came from one main source; women with three or more repeat episodes (see [bmj.com](#)), which accounted for a difference of 94 repeat episodes (125 by control participants and 31 by intervention participants). The mechanism of action for the intervention is unknown and was not evaluated in this study. Nevertheless, the authors of a study using a letter based intervention¹⁰ speculated about increased social connectedness, a concrete expression that someone still cares about the patient. A similar interpretation would be reasonable for our study.

Conclusion

Although we found no significant difference in the proportion of individual patients who repeated, we did find that the intervention was effective in reducing the number of events per individual. A small proportion of the deliberate self poisoning population accounts for substantial numbers of repetitions and treatment costs. That the effect of reduction in repetitions was seen in only women suggests that future studies need to be adequately powered to test treatment effect by sex.

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What is already known on this topic

Deliberate self harm is common and costly, with repetition rates of 6-30%

Deliberate self poisoning is the commonest form of deliberate self harm

Few interventions effectively reduce repetitions of deliberate self harm

What this study adds

A simple, inexpensive, postcard intervention for patients with deliberate self poisoning reduced the number of events per individual, but did not reduce the proportion of individual repeaters

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Does dietary folate intake modify effect of alcohol consumption on breast cancer risk? Prospective cohort study

Laura Baglietto, Dallas R English, Dorota M Gertig, John L Hopper, Graham G Giles

Abstract

Objective To evaluate the effect of dietary folate intake on the relation between alcohol consumption and breast cancer risk.

Design Prospective cohort study.

Setting Melbourne, Australia.

Participants 17 447 Anglo-Australian women resident in Melbourne, aged 40-69 years at recruitment in 1990-4, and followed up until 31 December 2003.

Main outcome measure Invasive breast cancers diagnosed during follow-up and ascertained through the Victorian cancer registry.

Results 537 invasive breast cancers were diagnosed. Compared with lifetime abstainers, the hazard ratio for breast cancer in women who consumed an average of 40 g or more of alcohol daily at baseline was 1.41 (95% confidence interval 0.90 to 2.23). No direct association was found between dietary folate intake and risk of breast cancer, but a high folate intake mitigated the excess risk associated with alcohol. The estimated hazard ratio of an alcohol consumption of 40 g/day or more was 2.00 (1.14 to 3.49) for women with intakes of 200 µg/day of folate and 0.77 (0.33 to 1.80) for 400 µg/day of folate (P = 0.04 for interaction between alcohol and folate).

Conclusions An adequate dietary intake of folate might protect against the increased risk of breast cancer associated with alcohol consumption.

Introduction

Alcohol consumption is a known risk factor for breast cancer. Although the association is modest, its adverse effect on breast cancer is one of the most consistent findings among dietary risk factors.¹ The role of the B vitamin folate in colorectal carcinogenesis has been widely studied, and an inverse dose dependent relation has been found.²⁻⁴ Some studies have also reported an inverse association between folate and risk of breast cancer,⁵⁻⁸ and the protective effect of folate on breast cancer is more pronounced for heavy drinkers,⁹⁻¹³ suggesting that folate and alcohol act in opposite directions in breast carcinogenesis. To test this hypothesis, we used the Melbourne collaborative cohort study to investigate if the association between alcohol consumption and risk of breast cancer is modified by intake of dietary folate.

Cancer Epidemiology Centre, The Cancer Council Victoria, Melbourne, 100 Drummond Street, Carlton, VIC 3053, Australia

Laura Baglietto senior research fellow
Dallas R English associate director
Graham G Giles director

Centre for Genetic Epidemiology, University of Melbourne, Melbourne
Dorota M Gertig senior research fellow
John L Hopper director

Correspondence to: L Baglietto laura.baglietto@cancervic.org.au

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