

Can a public health package on glaucoma reach its target population?

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Abstract

Purpose A pilot study to assess how successful a newspaper advertisement and a radio interview about glaucoma are at reaching their target population.

Methods The health intervention comprised two components: an interview on local radio and an advertisement in the local paper. Our target population were residents aged 45 years and above in either Southall (West London) or the Isle of Wight (IOW). A questionnaire was developed to be carried out pre- and post-intervention. The data from both locations pre and post were coded and cleaned. Tests of significance were carried out to assess statistical significance for differences in proportion, with tests for trend used where appropriate. All statistical analyses were carried out using Stata7.

Results Overall, the proportion who had heard of glaucoma increased from 54% before the intervention to 60% after ($\chi^2 = 3.7$, $P = 0.055$). The proportion who had heard of the disease increased by 13% ($\chi^2 = 8.76$, $P = 0.003$) in Southall and by 8% ($\chi^2 = 5.02$, $P = 0.025$) on the IOW. The proportion reporting seeing the advert increased significantly in both areas with greater effect in Southall. Those reporting hearing the radio interview only increased in Southall. On the IOW, females were more knowledgeable and responded more positively to the intervention. This differed in Southall where males tended to be the positive responders.

Conclusion In both areas a significant effect on those having heard of glaucoma was found. This could be attributed to both the advert and interview in Southall but would appear to be attributable to the newspaper advertisement alone on the IOW.

Eye (2004) 18, 478–482. doi:10.1038/sj.eye.6700688

Keywords: glaucoma; public health package; target population

Introduction

Primary open-angle glaucoma affects 1–2% of people over 40 years of age in Caucasian and Indian populations.^{1–4} The disease is strongly age related and results in a progressive, irreversible loss of the field of vision. It is largely asymptomatic until the late stages and is the major cause of preventable blindness in the elderly in the United Kingdom.

In the developed world, only 50% of those with the disease are diagnosed and receiving therapy.^{5–8} The reasons for this have been the subject of a programme of research by our group. We are approaching the problem from two directions; disease detection within the community, and public health-seeking behaviour. This study relates to the latter aspect.

Mass media is often used as an element of social marketing campaigns and is particularly of value where issues are seen to be of relevance to large proportions of the population. It has been observed that with any campaign it is likely that a proportion of the target group will not be exposed to the campaign, and a further proportion will not recall, understand or act on the message.⁹ Despite this, mass media remains one of the few options available for the communication of issues to large numbers of people. Research and evaluation of the use of mass media in health promotion has shown that it can be used effectively within certain areas.¹⁰ It can raise consciousness about health issues, convey simple information, and change behaviour.

This project is part of a larger intervention study. The main study aims to implement a health promotion campaign for glaucoma and to assess its impact on health knowledge and health-seeking behaviour. This paper reports on a pilot study used to assess how successful a newspaper advertisement and a radio interview about glaucoma can be at reaching their target population.

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Received: 15 May 2003
Accepted: 15 July 2003

Methods

Study location

Two very different populations were chosen for the study: the IOW and Southall (West London). Both were good for such a study because they had single radio stations for the community, local press and an established community network. The IOW is a mainly Caucasian population with an age bias towards the elderly. Southall, is a multicultural, diverse urban population with a substantial number of Indian origin.

The campaign

The health intervention comprised two components: an interview on local radio and an advertisement in the local paper. Our target population was people aged 45 years and above who were residents in either Southall (West London) or the IOW.

Campaign resources were developed to promote the campaign message to our specific target group (Table 1). The advertisements emphasised the importance of glaucoma and whom to contact for further information.

Interview on local radio

We decided that, for the purpose of this study, an interview on the radio would be more suitable than a radio 'phone in'. The interview was trailed for 3 days prior to its taking place. These trailers also contained information about glaucoma.

Questionnaire

A questionnaire was developed to be carried out pre- and post-intervention. The baseline questionnaire was used to establish the proportion of individuals who were positive responders in the absence of a true campaign. The questionnaire was then carried out after the intervention to establish the impact of the campaign. The

questionnaire was administered in English on the IOW and Hindi in Southall. In the latter location the advertisement and interview were in Hindi so it was vital to carry out the questionnaire in the same language.

Sampling

A convenience method of sampling was used in each area. People were approached in the High Street and in local temples in Southall and in the main town centre in Newport, IOW. People had to be within the correct age range and a local resident to be included in the study. Our sampling method has limitations as people who were housebound or did not frequent the areas of sampling would be excluded from the study.

Data analysis

The data from both locations pre- and post-intervention were coded and cleaned. Tests of significance were carried out to assess statistical significance for differences in proportion and logistic regression undertaken to assess confounding. All statistical analyses were carried out using Stata7.

Results

In total, 1104 records were included in the analysis. Characteristics are shown in Table 2.

Overall the proportion who had heard of glaucoma increased from 54% before the advert and interview to 60% after ($\chi^2 = 3.7$, $P = 0.055$). There was a large difference between areas. In Southall, about one-quarter (27% (95% CI, 21–33%)) of people had heard of glaucoma prior to the intervention whereas about three-quarters (75% (95% CI, 72–79%)) had heard of glaucoma on the IOW. The proportion who had heard of the disease increased by 13% in Southall and 8% on the IOW after the interventions. The proportion reporting seeing the advert increased significantly in both areas with a greater effect

Table 1 Advertisement Design Access.

Procedure

- Review previous and current glaucoma advertisements
- Brainstorm and design six prototype adverts
- Discuss adverts with eye health specialists—glaucoma doctors, nurses, optometrists and orthoptists
- Redesign adverts
- Discuss adverts with glaucoma patients to ensure they did not offend or cause anxiety to people with glaucoma
- Narrow adverts down to three

Southall

- Translate adverts in to Hindi
- Carry out focus groups with target population in Southall
- Choose advert for Southall

Isle of Wight

- Individual discussions with IOW residents from our target population.
- Choose advert for IOW

Table 2 Sample Demographics.

	Southall		Isle of Wight	
	Pre N = 190	Post N = 298	Pre N = 304	Post N = 312
<i>Age group (years)</i>				
46–55	24 (13%)	16 (5%)	83 (27%)	75 (24%)
56–65	48 (25%)	41 (14%)	79 (26%)	90 (29%)
66–75	74 (39%)	146 (49%)	89 (29%)	99 (32%)
76–85	33 (17%)	78 (26%)	44 (14%)	42 (13%)
86 +	11 (6%)	17 (6%)	9 (3%)	6 (2%)
<i>Gender</i>				
Male	99 (52%)	153 (51%)	121 (40%)	121 (39%)
Female	91 (48%)	145 (49%)	183 (60%)	191 (61%)
<i>Ethnicity</i>				
Caucasian	0	0	100 (100%)	100 (100%)
Indian	170 (89%)	290 (97%)	0	0
African	19 (10%)	8 (3%)	0	0
Other	1 (1%)	0	0	0

Table 3 Percentage of sample who had heard of glaucoma or seen intervention.

	Southall N (%)		Isle of Wight N (%)	
	Preintervention	Postintervention	Preintervention	Postintervention
Not heard of glaucoma	139 (73%)	179 (60%)	87 (29%)	65 (21%)
Heard of glaucoma	51 (27%)	119 (40%)	217 (71%)	247 (79%)
	$\chi^2 = 8.76, P = 0.003$		$\chi^2 = 5.02, P = 0.025$	
Not seen advert	183 (96%)	217 (73%)	277 (91%)	257 (82%)
Seen advert	7 (4%)	81 (27%)	27 (9%)	55 (18%)
	$\chi^2 = 43.34, P = 0.000$		$\chi^2 = 10.21, P = 0.001$	
Not heard interview	177 (94%)	238 (80%)	297 (98%)	302 (97%)
Heard interview	11 (6%)	60 (20%)	7 (2%)	10 (3%)
	$\chi^2 = 18.85, P = 0.000$		$\chi^2 = 0.47, P = 0.49$	

in Southall, while those reporting hearing the interview on radio only increased in Southall (Table 3).

There was a difference between male and females: in Southall more males than females reported having heard of glaucoma. Prior to the intervention this was not significant (females 24%, males 29%, $\chi^2 = 0.63, P = 0.43$), however, it reached significance after the intervention. (females 33%, males 46%, $\chi^2 = 5.49, P = 0.02$). On the IOW, the opposite was the case: before the intervention more females than males reported having heard of glaucoma (females 76%, males 64%, $\chi^2 = 4.71, P = 0.03$). After the intervention this difference was even greater (females 85%, males 69%, $\chi^2 = 11.4, P = 0.001$).

In both areas there was a small tendency for the younger age groups to report having heard of glaucoma more frequently.

The sources of knowledge for having heard of glaucoma differed between areas. Most on the IOW either could not remember where they had heard of the disease or had a friend or relative with the disease. There was more of a spread of information sources in Southall, TV or general knowledge being given as the most common source of knowledge. In both areas there was an effect in the proportion reporting having recently been exposed to knowledge of the disease following the intervention. This was, however, very large in Southall and small on the IOW.

There was no pattern to those who reported having heard of glaucoma by occupation in Southall, either before or after the intervention. On the IOW all grades of occupation had similar proportions who reported having heard of glaucoma. After the intervention there was a

selective increase in those reporting having heard of glaucoma, the professional group showing a striking effect (62% before and 92% after), with only a suggestion of effect in the retired group and no clear effect in any other group.

Logistic regression was undertaken with 'heard of glaucoma' as the outcome. Crude odds ratios showed a significant effect for the intervention: IOW (OR 1.52 (1.05–2.20, $P=0.03$)), and Southall (OR 1.81 (1.22–2.69, $P=0.003$)). A younger age was associated with having heard of glaucoma on the IOW ($P=0.001$) but not significantly in Southall ($P=0.11$). On the IOW, females were more likely to have heard of glaucoma (OR 0.48 (0.33–0.70, $P=0.000$)). In Southall, males were more likely to have heard of glaucoma (OR 1.56 (1.07–2.27, $P=0.02$)).

In a complete model adjusting for age, gender, and intervention the only important factor was the intervention (IOW predicts perfectly, Southall OR 1.60 (0.96–2.65, $P=0.07$)).

Discussion

In Southall, there was a significant impact with a higher proportion of individuals reporting seeing the advert, hearing the interview and having heard of glaucoma after the intervention. On the IOW the same findings occurred for the advert and having heard of glaucoma but there was no clear effect in terms of those reporting hearing the radio interview.

There were striking differences between the two populations. Not only was the ethnic composition different, as anticipated, but many more people at baseline had heard of glaucoma in the IOW: 71% compared to 27% in Southall. This could be due to social deprivation. Fraser *et al*¹¹ carried out a case-control study into risk factors for late presentation in chronic glaucoma and found social deprivation to be a major risk factor. This may be influenced by level of education. When we look at ward data from Ealing Council, 40% have poor literacy and 41% to have poor numeracy in Southall¹² well above the UK average. The variation could also be a result of ethnic differences. Patel and Murdoch have shown that Indians do not see health as the highest priority.¹³

More females on the IOW reported having heard of glaucoma. This result could be due to females accessing health care more than males.¹⁴ An interesting observation is that in Southall it was reversed; more males than females reported having heard of glaucoma.

Positive responders in Southall varied between 4 and 7% and on the IOW 2–9% for having heard adverts or interviews that had not yet taken place. This is in keeping with previous work.¹⁵ If an average of 5% positive

responders is subtracted from the results post-intervention 22% saw the advert in Southall, and 13% saw the advert on the IOW. In Southall 15% heard the interview while there was no clear effect of the interview on the IOW.

Only Southall showed an effect with the radio interview with an increase of 13%. Preliminary work in both areas prior to the interview showed everyone reported listening to Sunrise Radio in Southall while only 50% in the IOW reported listening to local radio. This would allow for a smaller effect in the IOW than in Southall but for it to have no effect there must have been other contributing factors. The interview could have been placed at the wrong time of day for our target population although we did try to get around this by having the adverts leading up to the interview throughout the day. On the day of the interview on the IOW, glaucoma was also featured as an item in their 6 am and 6 pm news programme. This, however, was not mentioned by any of the interviewees. In contrast, Southall had 8% of those who had heard of glaucoma from the radio but had not listened to the actual interview.

The above findings indicate that further research is required to determine the best method of reaching our target population through radio. Other media may need to be considered.

Strengths and limitations

There were two main strengths to this study. The first strength being that as far as we are aware, this is the first study to actually assess the impact of two different media sources aimed at raising awareness for glaucoma. Secondly, the two different populations highlighted patterns that were population-specific as were the strengths of responses.

The sampling method used is limited. Convenience sampling may not produce a representative population sample as it relies on people who can be accessed easily and conveniently. Although research was carried out before undertaking the study, our choice of media may not have been the best form for our message to reach our target population. Our study used only one radio interview and one newspaper advert which limits their exposure. A larger study would run a single advertisement/interview or a series, for a number of weeks.

For any health promotion package to be successful it needs to be reinforced by extensive public relations and promotions including media advocacy. This pilot study is part of the development of materials to be used in a full-scale health promotion package for glaucoma. It has provided us with a valuable insight for the use of media and its dissemination. The results show a positive

outcome to our original question and will play a crucial part in the development of a targeted health promotion campaign.

Acknowledgements

This study was generously funded by the Thomas Pocklington Trust. We are grateful to all who participated in this study. To Kamal Sharma who undertook the radio interview in Hindi on Sunrise Radio and produced the script for the Hindi Advertisements and Daksha Patel who carried out the Hindi focus groups. We would like to thank Melvyn Hillsdon and Patrick Branigan at the London School of Hygiene and Tropical Medicine for their excellent advice.

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