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Factors Influencing Participation among Melanoma Screening Attenders

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We surveyed the demographic profile and motives prompting to participate among people attending voluntary melanoma screening clinics in Southern Limburg, the Netherlands, in June 1993. Precampaign public announcements addressed only melanoma and its precursor lesions. All attendees completed a detailed questionnaire addressing demographic particulars and specific fixed choice questions on their motivation to attend.

There were 4,146 persons attending the screening clinics. Most attendees opted for examination of a specific lesion (71%). More females than males participated. Fear of having skin cancer was an important reason to participate (27%). Of all attenders, 16% had to be convinced by relatives or friends to attend the screens, and 33% would not have visited a physician on their own initiative when there had not been a free screening. Females were more concerned about skin cancer than males. The local and regional newspapers formed the most important precampaign publicity channel.

Free melanoma screenings attract large numbers of people. Males are underrepresented. They are less aware of the risk profile of melanoma. Future screenings should target the male population. ***Key words: skin cancer; gender; prevention; public campaign.***

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Theoretically, morbidity and mortality from melanoma can be reduced by early detection. Public education (1, 2) and selective screening (3, 4) are approaches to achieve earlier diagnosis and treatment. Screening activities on melanoma and its precursors are more effective when targeting defined high-risk groups (5).

The aim of the present study was to evaluate the demographic characteristics and motives prompting to participate among persons attending a number of selective screening clinics held in Southern Limburg, the Netherlands. The approach differed from previous attempts in the United States and other countries. So far, screening exercises have addressed all types of skin cancer, melanoma and nonmelanoma skin cancers inclusive. The Southern Limburg campaign targeted melanoma and its precursor lesions only (5).

MATERIAL AND METHODS

In June 1993 ten voluntary melanoma screening clinics were organized in the southern part of Limburg, the Netherlands. The area counts approximately 650,000 inhabitants.

The general public was made aware of the screenings by articles in the regional newspapers, by announcements in the neighbourhood periodicals and on the local radio and television stations, and by posters in waiting rooms of general practitioners and pharmacists, and in public libraries. Attention was focused on the risk factors and warning signs of melanoma and its precursor lesions. We especially targeted subjects with a more then average mole count, "funny looking" moles, changing moles, a fair skin complexion, a propensity to sun burn rather than tan, and a personal or family history of melanoma. No reference was made to the symptoms and signs of nonmelanoma skin cancers and their precursors.

The campaign was carried out according to the design of previous clinics conducted in the Arnhem region, the Netherlands, in 1990 (6, 7). Only dermatologists and senior residents in dermatology carried out the screenings. The attenders were examined on two consecutive Saturdays at the out-patient dermatology departments of one university hospital and five district hospitals in the area. All participants received a numbered questionnaire at entry, addressing the following items: 1) sex and age, 2) place of residence, 3) level of education, 4) reason for participation: examination of a specific lesion vs. complete skin check, 5) changes and symptoms of presenting skin lesions, 6) previous or intended visit to family physician for the same problem, 7) constitutional risk factors for melanoma, such as burning tendency and tanning ability, 8) publicity channels that led to participation in the project, 9) motivation for attending the screens, such as fear of skin cancer, cosmetic reasons, practical considerations, second opinion ('do not trust general physician'), interest in information on skin cancer, or other reasons (open question), 10) whether attending on own initiative or prompted by others, and 11) permission for follow-up.

In some instances more than one answer could be given. In these cases the total number of replies may outnumber the total group size. In other instances, because of missing, incomplete, or inapplicable data, the totals will not add to the total group size. Percentages were computed over the appropriate sets of information, excluding missing and inapplicable data.

Participants younger than 10 years of age did probably not fill-out the questionnaires themselves. Therefore we did also an analysis deleting this age group.

Persons with lesions regarded as suspicious of melanoma, nonmelanoma skin cancer, or distinct precursor states received a letter of referral with the presumptive diagnosis and the proposed line of management to hand over to their family physician. These persons were defined as positive screenees. No biopsies were taken during the screens. Positive screenees who had given informed consent to obtain outcome data were followed at 4 months and, in case of incomplete information, again at 10 months after the screens.

To test differences between samples the chi-squared statistic was used.

RESULTS

In total, 4,146 persons (60% females and 40% males) attended the screenings. Among these, 55 melanomas and 17 lentigo malignas were found clinically (5). The majority of participants were between 20 and 49 years of age (52%). The female to male ratio was highest in the age category 20–39 years.

Seventy-one percent of the attenders intended to show a specific skin lesion they were worried about. A general skin

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check was opted for by 23%, whereas 6% gave both reasons for their visit (specific skin mark plus total skin check). Females opted more often for examination of a specific skin mark than males. In Table I the most important reasons for participation are summarized according to gender.

Among the persons attending with specific skin lesions, 58% had noticed changes in these lesions, whereas among those who attended for a general skin check, only 36% indicated changes in some skin lesions ($p<0.001$). Women indicated signs or symptoms more frequently than men. In 60% of the screenees, these changes had been present for over 1 year. Delays of more than 1 year were as frequent in males as in females. Elderly persons exhibited substantially longer delays before attending the screening opportunity than persons of younger age ($p<0.001$).

Thirty-six patients of the screenees had consulted their family physician or dermatologist previously for the same reason. Females scored higher in this respect than males (39% vs. 32%; $p<0.001$).

Of all screenees, 33% would not have visited a physician on their own initiative for the same problem when there had not been a screening campaign; 32% doubted whether they would have consulted a physician, and 36% stated that they would have scheduled a consultation in the near future anyhow. Females indicated more often than males that they would have consulted a physician for their lesion(s) anyhow, even when there had not been a screening campaign (38% vs. 29%; $p<0.001$). Of the participants with symptoms, 22% stated that they probably would not have visited their physician when there had not been a free screening.

Of all participants, 16% had to be prompted by relatives or friends to attend the screens. Considerably more males than females were persuaded by others to attend. Especially, persons without any signs or symptoms more often attended in response to urging from other people than those with signs or symptoms (20% vs. 13%; $p<0.001$).

Fear of having skin cancer was an important reason to attend the screenings in 27% of the participants. Females were more concerned of having skin cancer than males. Fear of skin cancer was more evident in those with a low education level as compared with screenees with higher education ($p<0.001$). Also, fear of skin cancer was more frequently recorded by elderly persons than among the younger age groups ($p<0.001$). The presence of signs and symptoms of skin lesions, as compared with their absence, was more frequently associated with fear of skin cancer (32% vs. 21%; $p<0.001$).

An equally important reason for participation was the interest in information about skin cancer (27%). The interest in information was highest in females (Table I). Less important factors influencing participation were cosmetic or practical reasons (respectively 21% and 22%), and obtaining a "second opinion" from the screening dermatologist (6%). Twenty percent of the participants stated under "other reasons" that they visited the screenings "to have a skin check by a dermatologist".

The regional newspapers and neighbourhood magazines played the most important role in the precampaign awareness programme; 76% reported being informed about the campaign through these newspapers or periodicals. There was a striking difference in information through the newspapers and magazines with regard to level of education and age of the participants. Persons with a low education level got the information more frequently from newspapers and magazines than attendees with a higher education level ($p<0.001$). Likewise, elderly persons were more often informed through the newspapers and magazines than younger persons ($p<0.001$).

Table I. *Gender differences regarding factors influencing participation*

Reason or motivation to participate	Males	Females
Specific skin lesion (vs general skin check)	71%	78%***
Signs or symptoms of cutaneous lesions	45%	58%***
Prompted by relative or friend (vs attending on own initiative)	22%	12%***
Fear of skin cancer	23%	29%***
Cosmetic reasons	19%	23%**
Practical considerations ("Saturday is day off")	27%	19%***
Second opinion ("Do not trust general physician")	5%	7%*
Interest in information on skin cancer	24%	29%***

Significant levels: ***$p<0.001$; **$p<0.01$; *$p<0.05$.

Less important channels of information were relatives or friends (20%), and posters (15%). Gender differences in the responses to various types of advertisements were only conspicious regarding the information through posters.

The announcements on the local radio and television station were reported by 2% and 5% of the attenders, respectively.

When the age group till 10 years was discarded, the overall results were not affected. Assessment of the reasons for attending among the confirmed melanoma cases ($n=13$) was considered meaningless because of the small group sizes.

DISCUSSION

The demographic profile of the selective melanoma screening clinics in Southern Limburg shows a preponderance of female patients over males (3:2). The melanoma population in the Netherlands is characterized by relatively more female than male patients, also at the ratio of about 3:2 (8). This may suggest that the precampaign publicity attracted a screening population that is compatible with the reported gender distribution of melanoma patients. However, screening for skin cancer and melanoma in various parts of the world consistently demonstrates a preponderance of females, even in areas with a more equal melanoma distribution among the sexes (6, 9–12). Therefore, it is likely that the female preponderance noticed in this series a characteristic of screening in general.

Male patients seem to be less aware of malignant melanoma (13, 14). They attend their general physician or dermatologist with more advanced disease compared to females (15–17). Especially males should theoretically take advantage of early detection by public campaigns and screening exercises. It is therefore advisable to give special emphasis in such campaigns to reach the male population (18).

In order to answer the question to what extent selective screening has an additional value above the existing health care system, it is important to investigate subjects who would not have visited their general practitioner for the same problem when there had not been organized a screening. In the present

study particularly males would not have visited their general physician for the same problem. The same event has been reported by Girasek (19).

There were 641 individuals who were prompted to attend by others (16%). Again, males were more often persuaded by relatives or friends than females. In the study of Koh et al. only 7% of all attendees were convinced by others to attend the screens (12). Also in his study more males than females had to be prompted by others (10% and 6%, respectively). These observations have certainly to do with the fact that males are less interested in their naevi (20) and are less aware of early signs and symptoms of melanoma (14). Koh et al. showed that males in particular failed to recognize their own melanoma (13). Even lesions at "easy to see areas" were less often self-discovered.

The local and regional newspapers played an important role in the promotion of our screenings. In 76% of the screenees the written media were the most relevant publicity channel. We only used the local and regional press to launch our programme. These papers are mainly read by persons of the lower social strata. A national screening campaign, with announcements in the national newspapers, would undoubtedly attract more people of a higher education level. Posters distributed in waiting rooms of general physicians and pharmacists, and in public libraries appeared to be of minor importance. They were most often noticed by females. Posters might play a more important role if they are distributed at different places such as sporting facilities, banks, etcetera. The local radio and television were of negligible importance in this study. During screenings in the United States television has generated substantially more impact on the precampaign awareness programme (12, 19). Expectedly, the role of television will increase when the national stations are used.

It has to be taken into account that information obtained by this questionnaire only reflects the motivation and reasons to participate of those who did visit the screenings. Koh et al. (12) showed that (self-selected) participants of skin cancer and melanoma screenings differ from the general population in their risk profile and that they seem to be at appropriately high risk. Furthermore, the yields of confirmed skin cancers of these screenings are relatively high as compared with the expected harvest of prevalent cases from the general population (6, 11, 21, 22). This selective attendance is of importance with regard to costs and effectiveness.

In the precampaign awareness programme of the present study special attention was paid to the signs and risk factors of melanoma. The question arises whether there are other groups among the general population who are at a more than average risk, not because of clinical characteristics or phenotypic risk profile but because of their minimal awareness of melanoma. Results from studies from Newman et al. (23) and Melia et al. (14) indicate that awareness is lowest among men, low socio-economic groups, the under 25s, the elderly, and those without a partner. Males visit screening opportunities more often after prompting by spouses, relatives, or friends. Such persons may play an important role in the early recognition of melanoma. It is known that melanoma is diagnosed at an earlier stage in married persons (13, 24).

Melanoma screening as presented in this communication is feasible, seems to fulfil a need. The selection of screenees at more than average risk might be improved further. Motivation among the general public and disease perception are important issues that need special emphasis.

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