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Low levels of breast cancer risk awareness in young women: An international survey

Victoria Peacey^a, Andrew Steptoe^b, Sigurlína Davídsdóttir^c, Adriana Baban^d, Jane Wardle^{a,*}

^aCancer Research UK Health Behaviour Unit, Department of Epidemiology and Public Health, University College London, Gower Street, London WC1E 6BT, UK

^bDepartment of Epidemiology and Public Health, University College London, London WC1E 6BT, UK

^cDepartment of Education, Oddi v/Sturlugata, University of Iceland, 101 Reykjavik, Iceland

^dDepartment of Psychology, Babes-Bolyai University, 37 Republicii, Cluj 400015, Romania

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ABSTRACT

At least a fifth of breast cancer cases in Western countries are likely to be due to modifiable lifestyle factors. Previous work has found that while women in Western countries are aware that breast cancer can be hereditary, their knowledge of the influence of lifestyle is poor. This survey investigated on the awareness of breast cancer risk factors in university students from 23 countries between 1999 and 2001. Data were collected on awareness of links with heredity, alcohol use, exercise, obesity, stress, smoking and diet. Almost a third of women were not aware that any of these factors influenced breast cancer. Just 57% were aware of the genetic link and fewer than 1 in 20 women correctly identified alcohol, exercise or obesity as factors influencing breast cancer. Stress and smoking were the most commonly chosen lifestyle risk factors although current data suggest that they have little actual impact on breast cancer risk. There was considerable international variation, with highest levels of awareness in students in the United States of America (USA). Knowledge of risk in this sample was poorer than previously observed in older women. Health messages concerning cancer in general may be more relevant for this age group, because of the lower salience of breast cancer for younger women.

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1. Introduction

Women wishing to reduce their personal risk of breast cancer need to be aware of potential risk factors in order to make informed lifestyle choices. Recent data from population surveys in Ireland and Great Britain^{1,2} suggest that knowledge about breast cancer is poor. In the Irish survey, women over-estimated the prevalence of breast cancer and under-estimated the average age of onset. In both surveys, they showed little discrimination about risk factors, with many more nominating stress and smoking as risk factors than recognising the well-established risk factors. The highest awareness of any

risk factor was for 'family history', which was endorsed by over 90% of respondents in both countries. Other studies have also found poor knowledge of breast cancer risk factors other than hereditary risk.³

In terms of actual risk factors, several breast cancer genes have been identified, but these 'high-penetrance' mutations cause no more than 5–10% of breast cancer cases.⁴ The major causes are believed to be lifetime exposures to environmental and lifestyle factors, acting either alone or in combination with susceptibility genes of lower penetrance. Age at menarche, age at menopause and parity have all been implicated in breast cancer risk,⁵ and evidence that exogenous hormones

* Corresponding author. Tel.: +44 20 76796642; fax: +44 20 78132848.

E-mail address: j.wardle@ucl.ac.uk (J. Wardle).

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play a role is increasingly strong.⁶ In terms of lifestyle, the most important factors are alcohol intake,^{7,8} weight and physical activity.⁹ In contrast, smoking and stress, which were perceived as relatively important by the respondents in the Irish survey, are not thought to play a significant aetiological role. Higher alcohol consumption is related to risk in a linear fashion, with a 7% increase in relative risk for each additional ten grams of alcohol per day,¹⁰ and it has been estimated that between 2% and 4% of breast cancer cases in the developed world are attributable to alcohol.^{10,11} It has also been estimated that in industrialised countries, at least 11% of breast cancer incidence can be attributed to physical inactivity and at least 9% to obesity.⁹ Therefore, a fifth or more of all cases of breast cancer in industrialised countries are likely to be attributable to modifiable lifestyle factors – considerably more than the proportion of cases caused directly by high-penetrance breast cancer genes.

The aim of this survey was to assess knowledge of breast cancer risk factors in a large sample of young people from 23 countries. Female university students are likely to have an elevated risk of breast cancer later in life, because higher socio-economic status (SES) is linked to higher breast cancer incidence. Over 19000 male and female university students from 23 countries were surveyed to explore variation in

awareness of breast cancer risk factors as part of the International Health Behaviour Survey. To date, most studies on breast cancer risk factor awareness have been limited to single countries and an all-female sample. Male students are included in this analysis as a comparison group to provide insight into whether women have additional knowledge about a condition to which they are much more susceptible.

2. Method

2.1. Study design and sample

The International Health Behaviour Survey (IHBS) was carried out in 23 countries between 1999 and 2001.¹² Data collection was done by a questionnaire, using measures developed for a very similar survey in 1990.¹³ The questionnaire items were developed in English, then translated into the language of each participating country. Collaborators working in universities asked classes of students studying for non-health-related courses to complete the questionnaire at the end of a teaching class. Although completing the questionnaire was voluntary, participation rates in most countries were over 90%. Students were told that the survey concerned activities related to health and that an international comparison was

Table 1 – Percentage of female students believing that each factor has an influence on breast cancer (age-adjusted)

	n	Heredity	Alcohol	Exercise	Overweight	Stress	Smoking	Dietary fat	Fibre
USA	1120	93.7	10.1	17.9	15.9	19.5	26.6	13.0	11.2
<i>Northern Europe</i>									
Belgium	277	70.7	1.2	2.8	4.1	9.3	13.8	6.0	4.0
Great Britain	382	72.6	4.0	3.5	6.6	9.5	23.6	5.2	6.0
France	368	52.5	3.0	0.9	1.4	8.3	13.0	2.5	2.7
Germany	391	75.2	3.8	1.6	2.7	13.4	26.9	2.5	2.8
Iceland	361	63.5	1.9	11.0	3.8	13.3	48.4	2.2	3.6
Ireland	360	78.7	2.2	5.0	4.0	19.8	28.9	4.0	3.9
Netherlands	408	91.3	1.7	3.9	2.4	6.6	17.8	5.4	8.8
<i>Eastern Europe</i>									
Bulgaria	417	25.4	2.9	1.9	1.7	20.4	19.2	4.3	5.5
Hungary	352	54.3	3.1	3.9	1.9	11.1	21.4	5.4	5.2
Poland	424	73.1	3.1	0.9	1.4	9.9	17.3	2.4	2.2
Romania	393	47.9	3.8	2.8	5.1	13.2	6.8	6.3	3.6
Slovak Rep	699	49.9	2.1	1.7	4.0	11.7	17.4	3.7	11.5
<i>Southern Europe</i>									
Greece	395	75.8	5.0	4.7	4.5	19.2	40.7	5.8	14.7
Italy	1245	57.7	2.1	0.7	2.0	6.4	15.9	3.6	7.1
Portugal	468	53.0	1.1	0.2	1.9	3.8	10.6	2.3	4.5
Spain	264	67.1	6.8	3.0	6.4	6.0	30.3	10.6	3.4
<i>Asia</i>									
Japan	264	63.3	1.6	2.1	6.6	11.9	7.4	9.9	13.3
Korea	468	24.2	1.1	0.4	3.6	1.7	0.2	4.9	4.3
Thailand	523	35.1	3.1	3.4	4.3	6.4	5.0	10.6	3.6
<i>Africa and South America</i>									
Colombia	387	13.3	6.0	4.7	5.7	8.1	14.6	9.1	*
South Africa	413	18.4	3.4	5.3	1.3	1.9	5.8	4.6	17.2
Venezuela	345	55.7	2.9	4.2	7.9	15.2	11.8	14.0	6.1
Total	10724	57.1	3.3	3.8	4.3	10.7	18.4	6.0	6.6

* Not asked. USA, United States of America.

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