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Health behaviour advice to cancer patients: the perspective of social network members

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Background: Survival for many cancers is improved by healthier lifestyles, but giving lifestyle advice to cancer patients may seem insensitive. We investigated attitudes of members of cancer patients' social networks towards doctors giving lifestyle advice.

Methods: We identified social network members through a population survey of UK adults ($n=2024$, age $\geqslant 50$) by asking respondents whether anyone close to them had ever had cancer ($n=1273$). Individuals with a cancer diagnosis themselves ($n=222$) were termed cancer survivors. Attitudes towards doctors giving advice to cancer patients on physical activity, diet and weight were each assessed with eight items.

Results: Most social network members (88–93%) and survivors (87–93%) agreed that advice on diet, activity and weight would be 'beneficial', 'helpful' and 'encouraging', and 84–87% thought it was 'the doctor's duty' to provide it. Few network members (10–18%) or survivors (10–24%) believed it was 'unnecessary', 'interfering', 'insensitive' or implied 'blame'. Adjusted analyses using composite scores showed that attitudes did not differ between the groups.

Conclusion: Few cancer survivors or members of social networks of individuals with cancer thought lifestyle advice would be insensitive, and most thought it would be beneficial. These results help counter doubts about the acceptability of lifestyle advice in the cancer context.

With increasing numbers of people surviving cancer (Jemal *et al*, 2008; Maddams *et al*, 2009), the long-term and late effects, which include a raised risk of diabetes, osteoporosis, cardiovascular disease and second primary cancers, pose a growing problem (Brown *et al*, 1993; Travis *et al*, 2006). All these conditions are linked with aspects of lifestyle such as smoking, diet and physical activity (Hu *et al*, 2001; Mokdad *et al*, 2003; Office of the Surgeon General (US); Office on Smoking and Health (US), 2004; Warburton *et al*, 2006). Given that cancer survivors report rates of unhealthy lifestyle behaviours similar to the general population (Bellizzi *et al*, 2005; Eakin *et al*, 2007; Grimmett *et al*, 2009) this implies considerable scope for behaviour change interventions in the oncology context, which may be delivered either through primary care or by oncology specialists.

Health professionals can have an important role in encouraging favourable health behaviours. As many as 80% of cancer patients reported being interested in receiving advice on health promotion in one patient survey (Demark-Wahnefried *et al*, 2000), and an exercise recommendation from an oncologist significantly increased self-reported activity in newly diagnosed breast cancer patients (Jones *et al*, 2004). However, surveys in the United Kingdom find that fewer than half of cancer specialists routinely discuss exercise with their patients (Daley *et al*, 2008; Macmillan Cancer Support/ICM, 2011). Similar results have been reported in the United States, with only 35% of cancer patients being given advice on physical activity and fewer than 30% being given dietary advice (Demark-Wahnefried *et al*, 2000).

Among the barriers to giving lifestyle advice in this patient group is concern that it could be seen as insensitive or implying blame at a time when the patient is trying to cope with the stress of diagnosis and treatment (Macmillan Cancer Support/ICM, 2011). However, the emergence of the concept of 'survivorship' may reflect a more positive perspective, and with it, growing interest in the idea that health behaviour advice could be part of routine cancer care. Although evidence to date suggests that such advice would be positively received by most cancer patients, we do not know whether their family

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members and close friends perceive it to be appropriate, or conversely as insensitive. Given that social networks are important sources of information and support, and often provide a sounding board against which health professional advice is evaluated (Macario *et al*, 1998; Matthews *et al*, 2002; Pecchioni and Sparks, 2007), their attitudes may be influential in determining the reception of lifestyle advice.

The aim of this study was therefore to investigate the views of cancer patients' social networks on doctors giving advice to cancer patients on physical activity, diet and weight. For comparison, we collected the same data from cancer survivors.

MATERIALS AND METHODS

Design and participants. To identify an unbiased sample of individuals comprising the social networks of individuals diagnosed with cancer, we used data from a population-based survey of UK adults (aged $\geqslant 50$ years). Respondents were asked 'Has anyone close to you ever had cancer' (yes/no/not sure). They were also asked 'Have you ever been diagnosed with cancer yourself' (yes/no/do not wish to answer). Respondents who had received a cancer diagnosis were classified as cancer survivors, and those who reported that someone close had been affected by cancer were classified as social network members.

Data collection was carried out by a social research agency (TNS) who interviewed participants in their homes using Computer Assisted Personal Interviewing (CAPI) on weekdays between 1400 and 2000 h and at weekends in March/April 2012. Random-location, quota sampling was used to ensure the sample matched census data. Quotas were set for sex and work status, and for women, the presence of children in the home.

Measures. Age, sex, ethnicity (categorised into non-white or white), education (none/school only or university), marital status (married, separated/divorced/widowed/single) and UK region were recorded. Socioeconomic status (SES) information was based on the National Readership Survey classification (AB, C1, C2, D and E) (National Readership Survey 2007). Group AB includes those with (or who have had) higher or intermediate managerial or professional occupations, group C1 have supervisory or junior managerial occupations, group C2 are skilled manual workers, group D are semi- and unskilled manual workers and group E are state pensioners or lowest grade workers.

Attitudes towards advice on diet and activity were assessed with 8 items for each domain (a total of 24 items) developed by the authors with input from experts in the field: 'Doctors giving advice on (physical activity/healthy eating) to cancer patients at the end of treatment would be (beneficial/helpful/encouraging/the doctor's duty/insensitive/interfering/unnecessary/ placing the blame on patients)'. The same items were also completed for advice on weight loss, but in this case the stem of the questions specified 'cancer patients who are overweight'. There were four response options: 'strongly disagree', 'disagree', 'agree' and 'strongly agree', which were scored from -3 to 3. These were combined into two categories for some analyses (agree/strongly agree and disagree/strongly disagree). As well as being analysed individually, responses were averaged to create an overall attitude score for each domain, with higher scores indicating more positive attitudes. The reliability of all three scales was high (physical activity: Cronbach's alpha $= 0.86$, healthy eating: alpha $= 0.88$, weight loss: alpha $= 0.89$).

Analyses. Data were analysed using SPSS version 19 (IBM Corp., 2010). The SES categories were dichotomised for the analysis (AB, C1/C2, D, E). 'Don't know' responses were coded as missing for all analyses. Descriptive statistics were produced to determine the proportion of respondents who agreed or disagreed with each statement about physical activity, healthy eating and weight loss advice by combining agree/strongly agree and disagree/strongly disagree responses. Chi-square analyses were used to examine demographic differences between network members and survivors. Paired *t*-tests were used to compare the three overall attitude scores. Analysis of variance was used to examine the differences in the three mean attitude scores by demographic factors and cancer experience.

RESULTS

A total of 2024 adults completed the survey. Of these, 63% ($n = 1273$) knew someone close who had ever had cancer and were termed social network members, and 11% ($n = 222$) were cancer survivors; giving a total sample of 1495 for analysis.

Demographic characteristics are shown in Table 1. Social network members were significantly younger than the cancer survivors ($P < 0.01$), but the groups did not differ by sex, SES, ethnicity, education or marital status. The majority of the samples were married and from white ethnic backgrounds, and women were over-represented. More respondents either had no formal qualifications or school level only than were university educated, and more were in the lower than higher SES categories.

Table 2 shows agreement with the individual items on physical activity, diet and weight loss. Social network members were broadly positive towards health behaviour advice. More than 80% believed it would be 'beneficial' and 'encouraging', and $>90\%$ believed it would be 'helpful'. Interestingly, over 80% also thought it would be 'the doctor's duty' to provide such advice. On the negative side, fewer than 15% believed it would be 'insensitive', 'interfering' or 'unnecessary', with slightly more (14–18%) seeing it as placing 'blame' on the patient.

Cancer survivors were also positive, with $>80\%$ believing that it would be 'beneficial', 'helpful', 'encouraging' and 'the doctors duty'

Table 1. Demographic characteristics of social network members and cancer survivors

	Social network members		Cancer survivors		*P*-value
	N	**%**	***N***	**%**	
Age					
⩽64 years	658	51.7	88	39.6	
65+ years	615	48.3	134	60.4	0.001
Sex					
Male	557	43.8	94	42.3	
Female	716	56.2	128	57.7	0.695
Socioeconomic status (SES)					
AB,C1 (higher)	544	42.7	101	45.5	
C2,D,E (lower)	729	57.3	121	54.5	0.443
Ethnicity					
White	1240	97.4	219	98.6	
Non-white	30	2.4	3	1.4	0.345
Educational qualifications					
None/school only	1079	84.8	189	85.1	
University	185	14.5	33	14.9	0.929
Marital status					
Married	741	58.2	119	53.6	
Unmarried	532	41.8	103	46.4	0.200

Table 2. Respondent agreement with each statement about health behaviour advice[a]

	Physical activity		Healthy eating		Weight loss (for overweight patients)	
	Agree or strongly agree % (*n*)	Disagree or strongly disagree % (*n*)	Agree or strongly agree % (*n*)	Disagree or strongly disagree % (*n*)	Agree or strongly agree % (*n*)	Disagree or strongly disagree % (*n*)
Beneficial						
Social network	88 (1116)	6 (71)	93 (1179)	4 (49)	90 (1149)	5 (68)
Cancer survivor	87 (193)	7 (15)	93 (206)	5 (10)	87 (194)	9 (20)
The doctor's duty						
Social network	84 (1075)	9 (117)	85 (1086)	10 (132)	86 (1088)	10 (129)
Cancer survivor	86 (191)	10 (23)	84 (187)	13 (29)	87 (194)	10 (22)
Helpful						
Social network	91 (1156)	4 (49)	93 (1184)	4 (47)	92 (1169)	4 (56)
Cancer survivor	89 (198)	7 (16)	90 (200)	7 (16)	88 (196)	8 (17)
Encouraging						
Social network	89 (1129)	5 (66)	92 (1168)	5 (61)	88 (1117)	7 (89)
Cancer survivor	86 (190)	11 (24)	89 (198)	7 (16)	87 (192)	8 (18)
Insensitive						
Social network	14 (181)	79 (1002)	10 (128)	86 (1095)	15 (186)	81 (1033)
Cancer survivor	15 (34)	78 (172)	10 (23)	86 (191)	14 (31)	80 (178)
Placing the blame						
Social network	17 (218)	73 (931)	14 (182)	78 (994)	18 (234)	75 (953)
Cancer survivor	20 (45)	72 (159)	18 (39)	76 (168)	24 (53)	69 (153)
Interfering						
Social network	12 (148)	83 (1057)	10 (126)	87 (1108)	10 (128)	86 (1088)
Cancer survivor	15 (33)	81 (179)	10 (22)	86 (191)	14 (31)	82 (183)
Unnecessary						
Social network	13 (165)	79 (1000)	10 (121)	86 (1091)	11 (145)	83 (1062)
Cancer survivor	17 (38)	78 (173)	11 (24)	84 (187)	15 (33)	79 (176)

[a]Where scores do not total 100% this is due to 'don't know' responses.

to provide lifestyle advice, and fewer than 25% believing it would be 'insensitive', 'interfering' or 'unnecessary' or would imply 'blame'.

The mean attitude scores were 1.18 (s.d. = 0.84) for physical activity, 1.24 (s.d. = 0.83) for healthy eating and 1.16 (s.d. = 0.87) for weight loss. Attitudes were slightly more positive towards advice on healthy eating than physical activity ($P<0.001$) or weight loss ($P<0.001$). There were no differences between attitudes to physical activity and weight loss advice ($P=0.289$).

Differences in attitude scores by demographic characteristics and cancer experience are shown in Table 3. Younger respondents had slightly more positive attitudes to healthy eating advice ($P<0.01$), and respondents with a university education had slightly more positive attitudes across all behaviours ($P<0.05$). There were no differences between network members and cancer survivors in the adjusted analyses.

DISCUSSION

This is the first study to explore attitudes towards lifestyle advice in people who have someone close to them who has had cancer; a group we have termed 'social network members'. The results of this study show that social network members recruited through a population-based survey have positive attitudes towards doctors giving lifestyle advice to patients who have recently completed cancer treatment. The majority of respondents (over 80%) saw lifestyle advice as helpful and believed that doctors had a duty to provide it. Fewer than 15% thought it would be insensitive, although slightly more (14–18%) identified the possibility of appearing to blame the patient. Men and women were equally supportive of lifestyle advice, and the only demographic differences observed were more positive attitudes towards advice among younger and more highly educated respondents. In line with the growing use of the term 'survivor' rather than 'victim' or 'sufferer', these results may indicate that public attitudes towards cancer increasingly recognise the opportunities for long-term management of the disease (Mullan, 1985; Tritter and Calnan, 2002; McCorkle *et al*, 2011).

Given that friends and family members are important sources of information and advice for many people who are diagnosed with cancer (Macario *et al*, 1998; Matthews *et al*, 2002; Pecchioni and Sparks, 2007), it is encouraging that our results indicate such positive attitudes among social network members. Supported

Table 3. Comparison of mean attitude scores (range −3 to 3) by demographics and cancer experience in multivariable analysis

	Physical activity		Healthy eating		Weight loss	
	M (s.e.)[a]	*P*-value	M (s.e.)[a]	*P*-value	M (s.e.)[a]	*P*-value
Age						
⩽64 years	1.21 (0.03)	0.146	1.30 (0.03)	0.005	1.18 (0.03)	0.462
65+ years	1.15 (0.03)		1.18 (0.03)		1.14 (0.03)	
Gender						
Male	1.18 (0.03)	0.988	1.23 (0.03)	0.681	1.18 (0.04)	0.487
Female	1.18 (0.03)		1.25 (0.03)		1.15 (0.03)	
Socioeconomic status						
Lower (C2, D, E)	1.16 (0.03)	0.441	1.23 (0.03)	0.702	1.16 (0.03)	0.828
Higher (AB, C1)	1.20 (0.04)		1.25 (0.04)		1.15 (0.04)	
Ethnicity						
Non-White	1.09 (0.16)	0.554	1.01 (0.26)	0.126	1.00 (0.16)	0.321
White	1.18 (0.02)		1.25 (0.02)		1.16 (0.02)	
Education						
None/school only	1.15 (0.03)	0.015	1.22 (0.02)	0.043	1.14 (0.03)	0.024
Degree or above	1.32 (0.06)		1.36 (0.06)		1.29 (0.06)	
Marital status						
Unmarried	1.18 (0.04)	0.850	1.24 (0.03)	0.857	1.17 (0.04)	0.650
Married	1.18 (0.03)		1.24 (0.03)		1.15 (0.03)	
Cancer experience						
Social network	1.18 (0.02)	0.868	1.24 (0.02)	0.526	1.16 (0.03)	0.855
Cancer survivor	1.17 (0.06)		1.27 (0.06)		1.17 (0.06)	

[a]Adjusted for all demographic factors and cancer experience.

self-management for cancer survivors is a key aim of the National Cancer Survivorship Initiative (Department of Health, 2010), and family and friends are likely to be increasingly involved.

For comparison purposes, we included data on individuals who had themselves received a diagnosis of cancer ('cancer survivors'), although the sample was comparatively small. There were no differences in attitudes to lifestyle advice between social network members and cancer survivors in the multivariable analyses adjusting for demographic factors.

The clinical implication of these results is that health professionals can feel more confident that not only do most cancer patients welcome advice on diet, activity and weight, but that their family and friends are also likely to be supportive. We did not examine reactions to health behaviour advice from other health professional groups (the question specifically said 'doctors'). It is possible that patients and those close to them would feel that the medical teams dealing with their cancer care are particularly well placed to provide safe and appropriate advice.

The strengths of this study included the novel approach of identifying members of the social networks of individuals with cancer through a population survey. This reduced the bias associated with patients nominating members of their social network and probably achieved a broader range of respondents. By recruiting through a survey that included a range of topics, it is less likely that agreement to participate was biased by attitudes to cancer. The study also had a number of limitations. The questions were hypothetical and general, and social network members were not asked to think about a specific individual with cancer, so it is possible that their responses were more stereotyped. The group identified as cancer survivors was small, as would be expected in a population sample of this size, and we lacked any of the clinical detail that would be available if recruitment had been through a clinical setting. For example, the type of cancer diagnosis was not established, and attitudes for both patients and their social networks towards lifestyle advice may be dependent on both type of cancer and prognosis. However, it allowed us to ascertain whether the patients and network members had strikingly different attitudes, and given the small numbers that would likely have been available for each cancer type, sub-group analysis may have been limited. The attitude items were broad statements about advice on physical activity, diet and weight loss and they did not ask about specific recommendations; attitudes may vary for some types and formats of lifestyle advice. We did not include a question on smoking as it was felt that the public are more aware of the potential benefits of smoking cessation relative to the other health behaviours. However, it is possible that attitudes to advice on smoking may have been different.

With these caveats, the results of this study show that lifestyle advice in the context of cancer treatment is generally regarded as beneficial by social network members of individuals with cancer, as well as by survivors themselves. These findings should help counter health professionals' doubts about the acceptability of diet and activity advice for their patients.

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