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Risk and the importance of absent symptoms in constructions of the ‘cancer candidate’

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Cancer is a disease that is imbued with notions of risk, with individuals expected to avoid ‘risky’ behaviours and act swiftly when symptoms indicating a risk of cancer emerge. Cancer symptoms, however, are often ambiguous and indicative of a number of other conditions, making it difficult for people to assess when symptoms may, or may not, be the result of cancer. Here, we discuss interview data from a study examining the symptom appraisal and help-seeking experiences of patients referred for assessment of symptoms suspicious of a lung or colorectal cancer in the North-East of England. We explore how individuals draw upon ideas about cancer risks to assess whether cancer may be a possible explanation for their symptoms and to inform their decisions about help-seeking.

In our analysis, we applied the concept of candidacy to the data, to highlight how lay epidemiology shapes people’s perceptions of cancer risk, and their subsequent responses to it. We found that participants appraised their symptoms, and the likelihood that they may have cancer, in light of relevant information on risk. These sources of information related to lifestyle factors, family history of cancer, environmental factors, and importantly, the symptomatic experience itself, including the absence of symptoms that participants associated with cancer. The importance of experienced, and absent, symptoms was a core element of participants’ everyday constructions of the ‘cancer candidate’, which informed symptom appraisal and subsequent help-seeking decision-making.

Keywords: cancer; candidacy; help-seeking; symptoms; lung cancer; colorectal cancer

Introduction

In this article we present data from interviews with patients who had experienced symptoms of either a lung, or colorectal cancer, and had been referred for specialist assessment of their symptoms (only a proportion of whom were ultimately diagnosed with cancer). We consider how individuals appraised symptoms and assessed possible cancer risk, extending previous work examining the cancer candidate, to consider its relevance within a symptomatic population.

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Cancer risk

Cancer is the second leading cause of mortality globally, with 1 in 6 people expected to get cancer in their lifetime (World Health Organisation, 2018). In the United Kingdom (UK) cancer incidence is higher than 90% of the world and almost half of all cancers in England are diagnosed at a late stage (Cancer Research, 2015). The UK has consistently poorer survival than comparable countries (Berrino et al., 2007; Coleman et al., 2011) and achieving earlier diagnosis has remained central to consecutive cancer strategies for over 15 years.

UK cancer reduction efforts are located within a risk-centric society (Beck, 1992), wherein citizens are expected to identify, calculate, and respond to cancer risk appropriately. People are commonly conceived by policymakers as active agents in the endeavour of health, who should independently manage risk factors, maintain vigilance, and self-manage episodes of illness (Armstrong, 2014). There is an expectation that individuals will make ‘logical’ choices in response to possible cancer risk, predicated on their assimilation of public health messages about cancer, whilst simultaneously being reflexive about the ‘*indeterminate status of knowledge about risk*’ (Gabe, 2013, p. 89).

Cancer prevention messaging has increasingly emphasised the role of lifestyle factors in the genesis of cancer (Nettleton, 1997) and a ‘healthy lifestyle’ is associated with a 29–52% lower risk of cancer incidence and mortality (Zhang et al., 2020). The expectation on individuals to adopt healthy behaviours (Petersen & Lupton, 1996) frames cancer risk management as a ‘*fundamental good*’ (Bunton et al., 1995), and a moral imperative. ‘Nudge’ approaches are often employed to reduce engagement in risky behaviours (Thaler & Sunstein, 2008), and have been used in relation to lung cancer, through the introduction of plain packaging of cigarettes, and removal of tobacco products from view within shops (Department of Health, n.d.; Department of Health, 2011). Smoking is framed as a ‘bad’ choice, to be hidden from societal view, thus capitalising on the sense of shame that many smokers feel (Ritchie et al., 2010) to reduce smoking rates. In 2019, Cancer Research UK launched a controversial campaign, which used images of cigarette packaging branded with the slogan ‘*obesity is a cause of cancer too*’. This campaign faced much backlash, criticised for its narrow focus on the individual, stigmatisation of overweight and obesity, and failure to acknowledge the social and systemic factors that influence obesity (McCartney & Bauld, 2019).

Such campaigns inevitably create ‘risky groups’, through the boundaries they draw around the target population. These ‘risky groups’ contain individuals who engage in ‘risky’ behaviour, who may become marginalised because of their perceived deviance. For instance, during the HIV/AIDS epidemic, the ‘risky group’ consisted of gay men, prostitutes and intravenous drug users (Lupton, 1994). Sexually active women have been framed as the risky group for cervical cancer (Mishra et al., 2012), with their behaviours socially constructed as deviant and irresponsible. There follows a moral judgement on these ‘deviant’ individuals (Shepherd et al., 2000) and subsequent diagnoses of a disease arising from lifestyle choices are often seen as ‘*self-inflicted risk from acts of commission*’ (Mishra et al., 2012)

The definition of ‘risky groups’ can also impact the assessment and management of cancer risk among individuals who see themselves as outwith these groups. A ‘never smoker’ may assess the risk of new lung symptoms as minimal, as lung cancer is seen as the fate of smokers, and therefore decide not to consult, despite the swiftly rising proportion of ‘never smokers’ being diagnosed with lung cancer (Cufari et al., 2017).

The majority of cancers are diagnosed after patients seek help for concerning symptoms (Elliss-Brookes et al., 2012) and raising awareness of cancer symptoms has been central to UK policy (Forbes et al., 2014; Macleod et al., 2009). The 'Be Clear on Cancer' (BCOC) campaigns (Cancer Research, 2016a), sought to raise awareness of cancer signs and symptoms and encourage help-seeking among symptomatic individuals (National Cancer Action Team (NCAT), 2012). Whilst these campaigns do appear to have increased awareness of symptoms (Ironmonger et al., 2014; Power & Wardle, 2015), and consultations with targeted symptoms (Ironmonger et al., 2014; Moffat et al., 2015), there is very little evidence to show that these campaigns positively affected stage at diagnosis and outcomes. Increasing the public's knowledge of cancer symptoms is unlikely to be a 'magic bullet' for earlier diagnosis, particularly given that awareness of cancer signs and symptoms in the UK is no poorer than in comparable countries (Forbes et al., 2013), yet UK outcomes are consistently poorer (Coleman et al., 2011).

Although knowledge of cancer symptoms is associated with increased reports of anticipated help-seeking in asymptomatic populations (Quaife et al., 2014), for symptomatic populations, the link between knowledge and help-seeking is less consistent, with increased knowledge sometimes resulting in individuals taking longer to present with symptoms (Oliviera et al., 1999). This is likely because knowledge is just one element that feeds into help-seeking decision-making. Symptomatic individuals draw upon a range of factors, from multiple realms of their lives (Dobson et al., 2018) when assessing the necessity of help-seeking, including the competing priorities of work and caring commitments (Andersen et al., 2010; Scott et al., 2006), the sanctioning of help-seeking by others (De Nooijer et al., 2001; Smith et al., 2005) and concerns about 'wasting the doctor's time' (Hall, Rubin et al., 2015; Llanwarne et al., 2017).

Candidacy and cancer risk

The concept of candidacy is a useful lens for considering how people incorporate lay epidemiology and formal biomedical/scientific knowledge (for example, from public health campaigns) into their assessments of personal cancer risk, and their construction of the archetypal person who is at risk of developing cancer. Davison et al. (1991) identified the 'coronary candidate' as a concept employed by individuals when considering the archetypal person who would suffer 'heart problems' (Davison et al., 1991). Characteristics of the candidate are informed by observations of, and discussions about, individuals with 'heart problems', biomedical information shared through the mass media and public health campaigns, and awareness of celebrity cases. There are core characteristics of the 'coronary candidate' including middle age, overweight, poor diet, infrequent exercise, smoking, excessive consumption of alcohol, experience of physical or mental stress, and a family history of 'heart problems'. Candidacy for 'heart problems' is also highly gendered, with it often seen as a disease of men (Emslie et al., 2001).

Candidacy provides people with an '*explanatory system*' which allows individuals a sense of 'control' over the misfortune of illness, by providing a mechanism to explain it (Davison et al., 1991). Acting as 'lay epidemiologists' people contrast behaviours and characteristics against those of the 'coronary candidate' to retrospectively explain illness episodes (answering the '*why them?*' question), as well as prospectively predicting illness likelihood. Whilst candidacy provides explanation for the 'misfortune' of illness, by explaining and predicting risk, it does not, however, provide a mechanism to explain *all* cases, particularly cases which do not fit the profile of the coronary candidate.

Coronary incidents and deaths happening to the *'last person you'd expect'* (Davison et al., 1991, p. 14) cannot be explained by risk, but are instead taken as examples of bad luck. As such, the candidacy system is acceptably fallible, and never expected to account for all cases of 'bad luck', or the examples of 'good luck', where the archetypal candidate evades illness.

Macdonald et al. (2013) sought to examine whether societal constructs of candidacy were apparent for cancer and found that risky behaviours (including smoking and absence of a 'healthy lifestyle') were commonly reported by the general public as being associated with cancer, with family susceptibility and environmental factors (predominantly workplace exposure to carcinogens) also referred to in people's perceptions of candidacy for cancer, albeit to a lesser extent (Macdonald et al., 2013). The perceived unpredictability of cancer meant that the 'cancer candidate' was concluded to be a vague and challenging concept for most, possibly compounded by low awareness of cancer risk profiles and levels of fear surrounding the disease (Macdonald et al., 2013). Similarly, Robb et al. (2007) found that a community-based sample were aware of the risks of colorectal cancer, but differentiated themselves from those they perceived of as 'at-risk', by contrasting their own behaviour with that of family members and social contacts who had been diagnosed with cancer (Robb et al., 2007).

Examination of candidacy for cancer among individuals invited to take part in bowel cancer screening showed that lifestyle factors, such as obesity, poor diet and alcohol consumption, were associated with perceived bowel cancer risk, but overall, candidacy for colorectal cancer was wide. This was because of the recognisably unpredictable nature of colorectal cancer, and the prevalence of fit and healthy people who had been diagnosed with it, that were known to participants (Bikker et al., 2019). Women invited for mammograms held a concept of candidacy for breast cancer based on a combination of cultural and behavioural factors; being a member of a culture where breast feeding was common was seen as risk-reducing, as was belonging to a culture in which drinking alcohol was rare or prohibited (Pfeffer, 2004). Comparing one's own behaviours with those of populations believed to have a higher incidence of cancer is an unsurprising approach to risk assessment, given that people's accounts of, and decisions about, health risks are highly contextualised by knowledge gained from their everyday lives, and the experiences of those around them (Broholm-Jørgensen et al. 2019).

People diagnosed with skin cancer believed that someone who had been sunburnt often as a child was high-risk, whereas someone who regularly used sunscreen would not be the 'type' to get cancer (Topping et al., 2013). A diagnosis of cancer is also linked to a strong sense of embodied risk among women receiving treatment for breast cancer (Rees, 2018), as well as among women in receipt of abnormal smear test result (Kavanagh & Broom, 1998), who now saw their bodies as inherently risky.

Methods

We recruited patients who had been referred by their GP to the University Hospital of North Tees (UHNT) on the Urgent Suspected Cancer pathway (NICE, 2005) after presenting with symptoms suggestive of a lung or colorectal cancer (the two most common non-gendered cancers in the UK) (Cancer Research, 2016b). Patient eligibility was assessed by UHNT research nurses prior to invitation to participate. Patients referred on an Urgent Suspected Cancer pathway, or sent for direct access chest x-ray, aged 40 and over (in line with referral guidelines) were eligible to take part, but those

who were under review of an existing diagnosis, or deemed to lack capacity to consent were excluded. Participants were sent a study invitation pack, containing a self-administered questionnaire about their symptoms, help-seeking and demographic characteristics, as well as seeking consent for a follow-up interview. Invitations were sent a minimum of one and maximum of 12 days after the patient had first been seen in secondary care, meaning that most had not received a diagnosis at the time of invitation. This approach was adopted to minimise the time that had elapsed since symptom onset in order to aid the recall of dates during questionnaire completion.

One hundred and sixty-four completed questionnaires were received (11.8% response rate) and 26 of these participants (12 with lung symptoms and 14 with bowel symptoms) also took part in an interview. Interviewees were purposively sampled to elicit narratives of individuals who experienced a range of symptoms, time from symptom onset to consultation (a period also known as the 'patient interval') and diagnoses, whilst also seeking diversity of age and sex within the sample. By the time of the interview all participants had received a diagnosis for their symptoms, which included both cancerous and non-cancerous conditions. Three participants had a cancer diagnosis, which mirrors the proportion of cancers diagnosed through the Urgent Suspected Cancer pathway (Office for National Statistics, 2014). Other participants were diagnosed with conditions including chronic obstructive pulmonary disorder, bronchitis, diverticulosis and haemorrhoids, as well as a number of participants for whom there were 'no abnormalities detected'. It was important that we recruited patients referred with symptoms suggestive of cancer, as opposed to a cancer diagnosis, as the purpose of this research was to explore how people appraised and responded to possible cancer symptoms. Focusing on a symptomatic population and developing understandings of their assessments and reactions to possible cancer symptoms is crucial, as this is the target population of public health efforts to increase early presentation.

Semi-structured interviews were mainly carried out in participants' homes, with a small number taking place at the University. All were audio recorded and transcribed verbatim. We developed a topic guide, covering participants' symptom experiences, symptom appraisal, barriers and facilitators to help-seeking, and broader contextual factors, to facilitate comparison across data. The initial topic guide was developed by the study team, including patient representatives, informed by existing knowledge from previous research undertaken by the team and within the field more broadly. Novel lines of enquiry which emerged during interviews were followed and, where appropriate, were incorporated into a revised topic guide that was used in subsequent interviews. Participants were assigned pseudonyms to protect their anonymity and any identifiable characteristics were removed. We used NVivo software to support our organisation of data and analytical codes.

We adopted a constructivist grounded theory (CGT) approach, which assisted us in being reflexive about pre-existing knowledge, considering how these vantage points and sensitising concepts influenced our research design and delivery (Charmaz, 2006). CGT encourages flexibility in the analytical process, allowing novel data and themes to be incorporated into coding paradigms, whilst providing a structure within which to bring into focus the detail of the study data (Charmaz, 2006).

We conducted our analysis concurrently with fieldwork, facilitated by the use of constant comparison within and between transcripts and memo writing (Burr, 2003; Charmaz, 2014). Line-by-line coding of eight initial transcripts was undertaken by CD, half of which were also coded line-by-line by SB. Emergent codes were discussed and

a coding matrix produced for use with subsequent transcripts. We incorporated novel codes that emerged later in the analytical process into the matrix, revisiting previous transcripts in order to identify their presence. We discussed the analytical themes and emerging theory as a team at regular meetings. We made the decision to cease interviewing when emerging theories were repeatedly supported by new data and a point of ‘accuracy’ was believed to have been reached in the analysis (Charmaz, 2004; Glaser & Strauss, 1967).

We obtained ethical approval for this study from the NHS National Research Ethics Service (NRES) North East Committee, REC reference: 13/NE/0319.

Findings

Participants described experiencing a variety of symptoms; bowel symptoms included change in bowel habit, constipation, diarrhoea, pain, and rectal bleeding and lung symptoms consisted of cough, shortness of breath, wheezing and haemoptysis (coughing up blood).

Considering cancer as an explanation for symptoms

Most participants were aware of the association between their symptoms and cancer and considered this explanation alongside a number of other possible causes during their assessment of symptoms. However, people often initially dismissed cancer as plausible explanation, instead settling on benign and ‘minor’ illnesses as the most likely explanation for their symptoms.

‘At the back of my mind was “yes, it could be something sinister”, but I knew I had haemorrhoids so possibly, I thought, that [rectal bleeding] is a symptom of haemorrhoids.’

(Mary: rectal bleeding, consulted within 6 days)

When symptoms persisted, participants revisited and reconsidered cancer as a possible cause.

‘At first I thought “oh God, what is it?” and then when you think about it you actually think “well, it’s probably nothing but it needs to be checked out” but then your mind starts working overtime and you think “what if it’s the worst-case scenario and not just haemorrhoids or polyps or whatever?” You know. So that’s what made me go.’

(Steve: Rectal bleeding, consulted within 3 days)

Cycles of reappraisal, reconsideration, and dismissal of cancer as a plausible explanation were commonly referred to, with participants leaning towards a range of benign explanations in earlier phases of symptom appraisal. When these ‘everyday’ explanations were no longer deemed tenable (either because of a passage of time or changes to the nature of the symptoms), participants narrated that they revisited cancer and reconsidered it as a viable explanation for their symptoms.

For instance, upon noting his cough Richard acknowledged that it was a symptom of cancer but initially dismissed the cough as insignificant. When the cough lingered for longer than expected, he revisited cancer as a possible explanation, but, again, rejected it because he had no other notable symptoms which he would have expected, should he have cancer. When his cough persisted further Richard began to reflect on his symptoms

in light of his smoking history, drawing this into his assessment of the possibility of cancer, information that, at this stage, did not ‘convince’ him to consult. After 5 months of living with his cough, Richard reflected upon the length of time it had lingered, his smoking history and the sanctioning of help-seeking by others. These reflections were shaped by the indirect sanctioning of help-seeking through exposure to the BCOG lung cancer campaign, whereby Richard now felt that cancer was an increasingly possible explanation for his symptoms. His desire to ‘rule out’ cancer as the cause of his cough ultimately prompted his decision to consult.

Richard’s experience is illustrative of how participants drew upon numerous pieces of information in their assessment of their symptoms and cancer-risk, with lifestyle factors, family history of cancer, environmental factors, and symptomatic experience core to assessments of candidacy for cancer.

Lifestyle factors

Smoking history was a key part of ex-smokers’ assessment of new lung symptoms, who were aware that they were at an increased risk of lung cancer.

‘Twenty five years ago I smoked and I think if you had the symptoms that I had then you might start thinking to yourself “well, yeah, I’ll go and have a word”.’

(Richard: cough & chest irritation, consulted within 5 months, ex-smoker)

However, lung symptoms were normalised among current, and recently quit, smokers, as they were an expected consequence of smoking, considered to be ‘part and parcel’ of the experience of being a smoker (Mccutchan et al., 2019).

‘I said “I’ve got a cough. I smoke, that’s why I’ve got a cough! Everybody who smokes has a cough”.’

(Pauline: cough & breathlessness, COPD, consulted within 4–5 years, smoker)

Participants reflected on other lifestyle factors, beyond smoking, in their appraisal of their symptoms. Mark was a very physically active 63 year old, who considered himself to be a ‘healthy’ and ‘strong’ individual and felt that cancer was something that would not happen to him.

‘I’ve always eaten right, I’ve always sort of looked after myself and things, and I’ve always played sport and, you know ... I was playing five-a-side football every Friday night, you know, young lads that, 19, 20 and up to maybe 40s, that were a hell of a lot younger than me, and I’ve always took pride in myself with my fitness that I keep it up ... You would think, you know, me having this [bowel cancer] you think “no, that’s never ever”, even before any symptoms came on, “no, this won’t happen to me”.’

(Mark: change in bowel habit, consulted within 6 months)

Sedentary behaviour and poor diet are viewed by the public as behaviours which increase cancer risk (Balmer et al., 2014) and were also reported by participants in this study as being characteristic of someone who would get cancer. During his interview, Mark outlined the healthy behaviours he believed would be protective against cancer and employed his lack of candidacy for cancer as explanation as to why he waited a long time before consulting with his symptoms, as well as for his subsequent shock to be diagnosed with cancer.

Family history of cancer

Participants reflected on their family history of cancer when considering possible causes for their symptoms.

‘I had that niggly thing at the back of my mind that said “your dad died of bowel cancer”.’

(**Elaine:** diarrhoea, consulted within 4 months)

‘Another thought was in my mind as well, because my mother who died quite a lot of years ago, she died of dementia, and my dad died of lung cancer. But she had six sisters, and they didn’t die with the, involved with the bowel cancer, so that was another thought in my mind.’

(**Roy:** diarrhoea, consulted within 18 months)

A family history of cancer has been shown to be central to people’s appraisal of novel symptoms and a motivator to consultation (Hall et al., 2015); however, among our participants, the absence of family history also influenced their assessment of personal cancer risk, as their family history did not align with the characteristics of the cancer candidate.

Environmental factors

Exposure to environmental carcinogens was reflected upon by those experiencing lung symptoms, particularly men, who drew upon historical asbestos exposure in the workplace.

‘The stuff that I breathed in at places I’ve worked in has been really badif there is anything wrong with my chest, it certainly is not right, and if there is anything wrong I could only have got it in employment.’

(**John:** cough & breathlessness, consulted within 9 months)

Macdonald et al. (2013) found that exposure to carcinogens was not a key component of candidacy for cancer among their community sample, but that it was drawn upon when other explanatory frameworks did not adequately explain patterns of cancer in certain groups.

Absent symptoms

When assessing whether cancer was a viable explanation for their condition, participants reflected on both the symptoms that they were experiencing as well as those they were not. Participants had clear ideas about how cancer would manifest symptomatically, with weight loss being central to their expectations.

‘It’s probably been well over a year . . . I knew, if it had gone on that long and it was cancer I would have lost weight and my appetite would have gone, I’d have felt different in myself. But I didn’t, I just still felt as normal.’

(**Roy:** diarrhoea, consulted within 18 months)

Weight loss was a critical factor in participants’ assessments of the likelihood of an underlying cancer. Weight loss is one of the six key ‘signs and symptoms’ of cancer in UK NHS

risk communications (NHS, 2019) and participants may have absorbed information about this from leaflets and webpages, knowing others with cancer who had experienced weight loss, or being asked themselves in previous encounters with GPs about any unexplained weight loss. Therefore, not having lost weight provided reassurance that cancer was not the underlying cause of their symptoms. Alongside weight loss, participants also expected bleeding to be characteristic of the cancer candidate, which aligns with the reports of Bikker et al.'s (2019) participants, who also saw bleeding as indicative of cancer.

'I just kept saying "I know but I don't feel ill, I'm not losing weight, you know, I can't see that it's anything serious, otherwise I would be one or the other" . . . I wasn't passing blood, so as far as I was concerned, that [cancer] wasn't it. Had I been passing blood I would've gone immediately, 'cause to me that's one of the main symptoms. Because I didn't have that and because I wasn't losing weight, then it was obviously some type of bug.'

(Elaine: diarrhoea, consulted within 4 months)

Pain was also associated with cancer; however, there were clear expectations about the type of pain that cancer would cause. In contrast to the sudden or severe pain associated with a heart attack, cancer-related pain was believed to increase in intensity gradually, as cancer was considered to be an insidious disease that would slowly develop and manifest symptomatically. Much like weight loss and bleeding, not experiencing pain was taken as a sign that individuals did not have cancer.

'I mean you know what cancer's like, it's not like that, is it . . . Because cancer doesn't come on so quick . . . it's like, it's a pain, cancer is a pain that grows isn't it'

(Maggie: cough, fainting & weakness, consulted within 9 days)

Discussion

Participants undertook logical assessments of the likelihood that their symptoms were the result of an underlying cancer, considering and dismissing cancer multiple times during symptom appraisal, in favour of more 'minor', benign explanations, a process which has been found to be common to both cancer (Macdonald, Conway, Bikker, Browne, Robb, Campbell, Jc et al., 2019) and symptom appraisal more generally (Locker, 1981). In this study, participants' assessments of whether or not they were a cancer candidate, or at increased risk of cancer, incorporated information on lifestyle, family history and environmental risk factors, all of which have been previously identified as components of the cancer candidate (Macdonald et al., 2013).

Whilst smoking was seen to be a behaviour characteristic of the cancer candidate, the interplay between smoking status, symptomatic experience and individual's perceptions of their own candidacy was complex. Smoking history did inform constructions of the cancer candidate; however, for current and recently quit smokers, smoking status and the onset of lung symptoms were often appraised together as being indicative of minimised cancer risk, as these symptoms were an expected part of being a smoker. Recent smoking history may therefore serve as a barrier to help-seeking and early diagnosis among people with new lung symptoms, as these symptoms are not conceived of as indicative of cancer risk, and become integrated into their constructions of themselves as smokers.

Abstinence from risky behaviours is widely perceived of as a means of managing cancer risk (Balmer et al., 2014; Sanders et al., 2003); however, people are cognisant of

examples of individuals (like Mark) who ‘did all the right things’ yet still developed cancer (Balmer et al., 2014). These examples of ‘bad luck’ are incorporated into concepts of candidacy, to explain cases where individuals are diagnosed with cancer, yet do not align with the archetypal candidate. Davison et al. (1991) argued that candidacy is a fallible system that allows for such deviations (Davison et al., 1991); however, it seems that these examples of ‘the last person you would expect to get it’ may be easier to accept when they occur to someone other than oneself, as is evident with Mark’s difficulty in reconciling his bowel cancer diagnosis with his behaviours and perceived personal risk. People who led ‘healthy lives’ and avoided risky behaviours associated with cancer often viewed themselves as the antithesis to the cancer candidate, meaning a subsequent cancer diagnosis was unexpected (Lupton, 2003; Macdonald, Conway, Bikker, Browne, Robb, Campbell, Jc et al., 2019). Many of the risks associated with cancer relate to lifestyle choices and there can be reluctance to identify as a candidate (Pfeffer, 2004), in order to protect oneself or family members from judgement and criticism (Macdonald et al., 2013). Instead, these individuals often cite the non-modifiable factors that may have caused their cancer to develop (Bikker et al., 2019).

Family history of cancer was prevalent in participants’ assessment of their cancer risk, with an absence of family history indicating a decreased cancer risk to many. Family history appears to be a common component of candidacy for both cancer (Macdonald et al., 2013) and heart disease (Davison et al., 1991), with the historical presence, or absence, of disease within a family central to people’s assessments of candidacy.

In this study, concerns about historical exposure to asbestos were often raised by male participants who had experienced lung symptoms. Historically, many men in the region had been employed in chemical industries and so exposure to carcinogens, such as asbestos, and observations of individuals diagnosed with asbestos-related diseases may have been particularly salient in this population. Given that Macdonald et al. (2013) found this to be a tangential element of candidacy for cancer, we suggest that the characteristics of the cancer candidate are likely to be highly localised, as constructions of candidacy are heavily informed by observation of others.

In addition to these indicators of risk, we found that symptomatic experience, or more accurately the absence of certain symptoms, was central to participants’ constructions of the cancer candidate. Participants referred to key symptoms which they associated with cancer, with bleeding, pain, weight loss, and a general feeling of being ‘unwell’ perceived of as universal to embodied experiences of cancer. Many participants initially reflected on cancer early on in their symptom appraisal process, but dismissed it as a viable explanation for their symptoms, based on the absence of these ‘key’ symptoms that they associated with the cancer candidate.

Other research has shown that the absence of severe symptoms initially provides reassurance to people who later go on to be diagnosed with cancer (Macdonald, Conway, Bikker, Browne, Robb, Campbell, Jc et al., 2019). People with symptoms of oral cancer were found to be aware that their symptoms were indicative of cancer but did not believe that cancer could be the cause of *their* symptoms (Scott et al., 2007). Similarly, people whose skin changes did not match their mental image of melanoma normalised their symptoms and took longer to present (Walter et al., 2014). Discordance between constructions of the cancer candidate and individuals’ symptomatic experience appears to impact help-seeking decision-making, which has significant implications for time to diagnosis of cancers, and subsequent outcomes.

Previous examinations have found that although there were some consistent components in people's constructions of the cancer candidate, many found it challenging to define, particularly because of the unpredictability of the disease. Whilst candidacy for cancer may be wide among the general population (Macdonald et al., 2013) or those for who are in a liminal state of risk after invitation to screening (Bikker et al., 2019), we would argue that the concept of the cancer candidate takes on life when someone enters a symptomatic state and is subsequently forced to appraise these symptoms and assess their personal cancer risk.

These differences in people's ability to identify the cancer candidate may be because cancer is not an everyday consideration (Balmer et al., 2014), but something that '*only comes up when it becomes personal*' (Salant & Gehlert, 2008, p. 608). Kleinman (1980) argued that explanatory models of illness are drawn upon and become more salient during episodes of illness, and that these 'in the moment' models are distinct from everyday discourses and explanatory models of illness. Therefore, whilst cancer candidacy may not be evident in everyday discourses, a symptomatic experience leads to an 'in the moment' assessment of candidacy which changes how people draw upon and perceive candidacy as an explanatory tool.

Limitations of the data

This analysis is based on 26 interviews with participants with symptoms of either lung or colorectal cancer, who were referred for specialist assessment through the Urgent Suspected Cancer pathway. The timing of the interviews (after people had been referred to secondary care and received a diagnosis) may have shaped the narratives presented. At the point of interview, participants had been referred and investigated for a possible cancer and received a diagnosis for their symptoms. There were a range of eventual diagnoses, and although most participants did not have an underlying cancer, all participants would have been made aware of their GP's suspicion of cancer at the point of referral. It may be that the accounts of cancer risk, and perceptions of cancer candidacy, presented here were influenced by this investigative process, making cancer risk a more prominent feature in people's narratives. Similarly, the receipt of a diagnosis by the time of interview may also have reframed participant's lifeworlds and understandings around cancer risk, dependent upon whether they were ultimately diagnosed with cancer or not.

During the interview, we asked participants to tell us about their experiences of symptom onset, as well as how they felt about their symptoms at the time, and what they thought may be causing them. We did not explicitly ask participants whether they thought their symptoms were caused by cancer, or about perceptions of their own cancer risk; however, both of these topics arose organically during interviews. Discussion about cancer risk was present across interviews, irrespective of ultimate diagnosis, with many participants stating that concerns about cancer were the motivator that prompted help-seeking. Participants discussed how cancer was considered as a possible explanation for symptoms early in symptom appraisal periods, with this explanation often rejected and revisited multiple times prior to help-seeking decision-making. Assessment of cancer risk was an integral part of participants' accounts of appraisal of their symptoms, long before cancer was introduced as a possibility by health care practitioners. This suggests that irrespective of eventual diagnosis, reflections on cancer candidacy may be common among the symptomatic population.

The convergence of participants' accounts of help-seeking across the two different symptom groups may mean that themes specific to the relative symptom/cancer sites were not fully explored or identified, because of the smaller numbers of participants with each symptom, relative to the overall sample. However, assessments of the likelihood of cancer and potential candidacy seemed to transcend symptom groups, with the exceptions of family history and asbestos exposure, which were of greater salience to participants with bowel symptoms, and lung symptoms, respectively.

Conclusion

In this paper, we have explored how people who have recently experienced lung or bowel symptoms identify characteristics of the 'cancer candidate', based on perceived cancer risk. Participants reflected upon, and generally dismissed, cancer as a possible explanation for their symptoms, drawing upon numerous pieces of information to inform this assessment. Our participants considered lifestyle risk factors, family history of cancer, environmental risk factors, and the presence, or absence, of key symptoms in their assessments of candidacy for cancer. They drew upon constructions of the cancer candidate to consider and contrast individual risk factors and embodied symptomatic experiences, in order to ascertain whether they were viable candidates for cancer.

Among participants in this study, exposure to carcinogens in the workplace was a common experience throughout the working lives of people within their communities. Assessment of lifestyle factors in relation to cancer risk was specific to local contexts, with environmental exposures, and awareness of local disease profiles and experiences, shaping participants' constructions of the cancer candidate. Whilst the concept of the cancer candidate was not always wholly tangible in everyday discourses, the concept appeared to be activated when people experienced symptoms. Among our sample of symptomatic individuals, the cancer candidate was a discernible archetype, which participants drew upon in their assessment of symptoms and cancer risk, suggesting that timing of cancer risk assessment is critical, with an individual's perceived alignment with the cancer candidate having the potential to fluctuate with time and context.

Participants' beliefs that weight loss, pain, bleeding, and a general feeling of being 'unwell' were universally characteristic of cancer experiences is a finding which demands further attention. Traditionally, public health campaigns have been premised on the belief that disseminating information about cancer signs and symptoms will result in earlier presentation. Campaigns generally target site-specific cancer symptoms, but fail to comment upon the more systemic symptoms that appear to be central to collective expectations of embodied cancer experience. We need to understand why people expect weight loss, pain, bleeding and 'feeling unwell' to be central to an embodied experience of cancer whether there are other symptoms which people see as fundamental to cancer, as well as how symptom absence impacts the timing of help-seeking. Developing a more detailed understanding of the cancer candidate, and how it is applied by people in their assessments of cancer risk and help-seeking decision-making, has the potential to significantly improve time to presentation and early diagnosis. Given the centrality of lay epidemiology in people's assessments of cancer risk and constructions of the cancer candidate, it is vital that the cancer candidate be more fully understood and integrated into the design and delivery of public health interventions to increase early presentation.

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