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Screening for breast cancer: medicalisation, visualisation and the embodied experience

Abstract

Women's perspectives on breast screening (mammography and breast awareness) were explored in interviews with midlife women sampled for diversity of background and health experience. Attending mammography screening was considered a social obligation despite women's fears and experiences of discomfort. Women gave considerable legitimacy to mammography visualisations of the breast, and the expert interpretation of these. In comparison, women lack confidence in breast awareness practices, directly comparing their sensory capabilities with those of the mammogram, although mammography screening does not substitute breast awareness in a straight forward way. The authors argue that reliance on visualising technology may create a fragmented sense of the body, separating the at risk breast from embodied experience.

Keywords: breast screening, medical imaging, embodiment, medicalisation
mammography, breast awareness

Introduction

Women's midlife has become subject to extensive medical intervention and monitoring, from treatment of menopausal hormone changes with hormone replacement therapy (HRT), to monitoring of bone density and screening for breast cancer. Medicalisation, used in its original sociological sense, implies the ever-expanding jurisdiction of medicine over everyday lives and so-called 'normal events' such as birth, death and ageing, sexuality, fertility and childhood behaviour (Zola, 1977; Illich, 1975) and, as a concept, medicalisation highlights the social, moral and political

as well as the scientific dimensions of medical knowledge. Second wave feminist writing, in particular, developed the medicalisation critique to reveal the use of medicine as an agent of social control and of the social construction of gender and sexuality, highlighting how these discourses have historically constituted a site of sexual discrimination. However, since the 1990's a range of debates suggest that the medicalisation thesis may be overly simplistic (see for example Roberts, 2002) and that women are not passive victims of medical 'imperialism', but negotiate the range of subject positions available to them (Wadsworth and Green, 2003).

This paper examines how the nature of medical technology influences women's negotiated positions in relation to medicalisation. The technology on which this paper focuses is breast screening, by which we mean actions taken by women and health professionals to detect changes in the breast which may indicate early breast cancer. Breast screening focuses on women as breast cancer is relatively rare in men.

Screening for breast cancer

Screening for breast cancer includes the following approaches:

- 'breast awareness', that is women being aware of the look and feel of their breasts, what is normal for them, noting any changes of concern such as lumps and reporting them to a doctor (NHS Cancer Screening Programmes, 2006)
- breast checks by a health professional where a doctor or nurse checks a woman's breasts on a regular basis (e.g. annually)
- mammography visualization with x-rays which is then interpreted by an expert.

The field work for this paper was undertaken in the UK which has a publicly funded mammography screening programme inviting all women aged 50-70 years for mammography every three years (Advisory committee on Breast Cancer Screening, 2006). This population screening programme is run independently of responsive health care, such as general practice, with the letters of invitation and results going direct to women. A similar system is found in a number of other countries e.g. Denmark, Canada and Australia (Jørgensen and Gøtzsche, 2006). In the UK, the programme was established in 1987 following a national report demonstrating that early detection and treatment would reduce the rate of early death from breast cancer (Forrest, 1986). Three quarters of women invited for mammography screening take up the invitation (Cancer Research UK, 2004; Advisory committee on Breast Cancer Screening, 2006) and the national screening programme estimates that the programme saves 1400 lives each year in England. This means ‘for every 400 women screened regularly over a 10 year period, one woman fewer will die from breast cancer than would have died without screening’ (Advisory committee on Breast Cancer Screening, 2006: 1).

However, the value of mammography screening has been questioned (Dixon, 2006).

A review of benefits and harms found that while screening reduced breast cancer mortality, it also led to over diagnosis and over treatment (Gøtzsche and Nielson, 2006). In promoting attendance at mammography screening, invitations and accompanying information tend to exaggerate the benefit of the programme and down play potential harms (Thornton et al., 2003; Jørgensen and Gøtzsche, 2006; Slaytor and Ward, 1998). In summary, the balance of risks and benefits is still disputed, with

particular concern about the extent to which women are appropriately informed about both (Webster and Austoker, 2006).

Breast awareness is also promoted, having replaced self-examination in the early 1990s after doubts were raised about the efficacy of the more formal self-examination (Austoker, 2003; NHS Cancer Screening Programmes, 2006). A review of two large trials found that breast self-examination did not reduce mortality but did increase the number of biopsies performed (Kösters and Gøtzsche, 2003). The numbers of women who follow advice on breast awareness or self-examination is unknown (Pfeffer, 2004b) but studies have found that most women do not examine their breasts regularly (Kearney, 2006; Babrow and Kline, 2000). The effectiveness of breast awareness for reducing mortality has not yet been adequately evaluated (Pfeffer, 2004a) but other benefits have been suggested, including empowerment of women in regard to their health (McCready et al., 2005).

There is a lack of evidence for any benefit from regular breast checks by doctors and nurses (Vainio and Bianchini, 2002) and in the UK such checks are not encouraged. Therefore this study does not consider this type of breast screening.

Medicalisation and women's agency in breast cancer screening

Over-simplistic assumptions that medicine has only been a source of women's oppression have been tempered by claims that it has also contributes to their liberation. Over the course of history, women have sought out and engaged actively with the medicalisation of childbirth to reduce mortality, infection and pain (Reissman, 1983) and in contemporary times continue to seek technological interventions to improve their lives

(Williams and Calnan, 1996; Griffiths, 1999a; Roberts, 2002). Cancer is one of the health problems most feared by midlife women (Griffiths, 1995) and many women have personal, embodied experience of breast cancer or know of someone who has experienced breast cancer. This is borne out in the prevalence rates: one in nine women in the UK will develop it at some point in their lives (Office of National Statistics, 2005). In addition, breast cancer has a high public profile – it is four times more likely to be headline news than any other cancer (Saywell cited in Gibbon, 2007: 2). Women actively participate in screening and even demand services. In the 1970s, the women's health movement largely advocated self-help in place of institutionalized medicine that was seen as paternalistic and disempowering, but by the 1980s some women's groups were advocating mammography and campaigning for more services (Fitzpatrick, 2006). The 1990s saw the growth of preventative health campaigns around the disease in the UK, alongside a culture of disease-specific activism, promoting mammography and breast awareness (Gibbon, 2007). However, criticism continues from some women's groups, particularly in relation to the high level of corporate involvement in breast awareness campaigns and the lack of attention to environmental factors in causing breast cancer (Ehrenreich, 2001; Potts, 2004). It can also be argued that liberal models of choice in relation to medical decision making are flawed due to a lack of attention to the workings of power, the inherent uncertainties in medical knowledge, and the almost impossible complexity of factors relating to health (Roberts, 2007: 146). Evidence about the causes of most breast cancer is insufficient to calculate an individual's risk.

In considering whether they themselves are candidates for breast cancer, women compare themselves with idealized others, including those with higher 'risk', by

‘strategically amplifying or submerging differences and similarities’ to distance or align themselves with breast cancer candidacy (Pfeffer, 2003). The medical response to the very real experience of breast cancer for women has been to focus on individual responsibility, including attendance at screening (Griffiths et al., 2006). This response is reflected in the media coverage of breast cancer with little attention being given to other causes beyond individual control (Brown et al., 2001). Even the most women-orientated advocacy literature places much emphasis on the evidence that women who attend screening have a greater chance of surviving breast cancer diagnosis (Europa Donna 2009).

The sociological literature around women’s attitudes to breast screening has often focused on reasons for non-compliance, with the goal of improving women’s adherence to advice about mammography screening and breast awareness (Kearney, 2006; Babrow and Kline, 2000). While we know how many women attend for mammography, little is known about *why* women accept or reject the invitation (Pfeffer, 2004b). As Howson (1999) has noted in relation to cervical screening, the social science literature has tended to present compliance with screening as ‘morally neutral’, in other words the desirable, rational, and unproblematic response to health information. The brief overview above already points to a more complex situation. Indeed, there is strong evidence in the literature that screening programmes imply a social obligation to participate – especially for women as they are often represented as bearing responsibility for their own health and that of their families (Lupton, 1995; Howson, 1999; Bush, 2000). This may be connected with a wider trend reported by Rose who argues that, in the twenty-first century, health has become an ethical value and the maximization of health a moral obligation. Such principles are ‘inevitably

translated into microtechniques for the management of communication and information that are inescapably normative and directional. These blur the boundaries of coercion and consent' (Rose, 2007: 29).

As we have outlined, a number of issues add to the complexity of the interplay between medicalisation and women's agency. This study explores this further through women's accounts of breast screening, comparing accounts of mammography screening, a medical technology that visualizes the internal substance of the breast, and breast awareness undertaken by women themselves, noting their embodied feeling of their own breast, from within their breast and through palpating their breast. As the impact of the technological visualization of the breast was a theme that emerged strongly from women's accounts, we briefly introduce the issue here before describing our study.

Medical visualization and the embodied experience

Medical images of various kinds are often given more credence than patients' experience (Gunderman, 2005; Henwood, 2001), risking creating a fragmented sense of the body. For example Reventlow et al., suggest that bone scans create a distance between women and their bodies, as the body becomes an object to be observed by experts (Leder cited in Reventlow et al., 2006: 2727). By focusing a 'technology assisted' medical gaze on specific diseased or at risk body parts, the body itself may be represented as fragmented (Green et al., forthcoming). Although many people actively engage with screening technologies it is possible that as medicine focuses more and more on the bodily interior, and on pre-symptomatic illnesses that are generally beyond lay perception, our sense of autonomy and efficacy in relation to our

own health may decline (Gunderman, 2005). However, this line of argument is not restricted to recent advances in imaging as a similar fragmenting effect has been attributed to the 'low-tech' medical gaze. Writing about gynaecology, Kapsalis (1997) argues that legitimately subjecting female genitals to the medical gaze entails elaborate protocols that result in a disembodied vagina, marking it a proper medical object rather than pornographic spectacle. The impact of medical visualization of the breast on women's embodied experience of their breast is explored further as we consider our interview data.

The study

In this paper, we use data from interviews undertaken as part of an Economic and Social Research Council (ESRC) funded study into the use of health technologies in women's midlife. In order to understand the social impact of health technologies, and the specific social processes and mechanisms involved, the study examined the approaches used by individual women to health technologies, including breast screening, hormone replacement therapy (HRT) and screening for osteoporosis using bone densitometry (Green et al., forthcoming; Green et al., 2006; Green et al., 2002; Griffiths and Green, 2003; Griffiths et al., 2006; Griffiths et al., 2005). This paper focuses on the women's interview accounts of breast awareness and mammography screening.

This paper reports on 61 interviews undertaken with women sampled from across the age range 45-64 years.¹ Of the 61 interviews, 36 were with women purposively sampled from community groups and by snowball sampling for diversity of ethnicity, sexual orientation and able-bodiedness. The dimensions of diversity were chosen as

there was some evidence in the literature that they correlated with level of uptake of breast screening (Pfeffer, 2003; Fish and Wilkinson, 2003; Swain et al., 1993). Of the 36 respondents in the community sample, 7 were British Asian, 12 were lesbian (2 interviews each involved 2 lesbian women), and 7 had a mobility disability. The remaining 27 interviewees were recruited from primary health care sites (general practice and community women's health clinics). As there is evidence from the USA of reduced uptake of mammography with worsening health (Lane 2000), purposive sampling was used to ensure diversity on the dimension of living with chronic disease (9 interviews were with women living with diabetes) and included women who had used none of the health interventions (6 women). To ensure diversity of socio-economic status and context, recruitment was undertaken in two localities in England of contrasting affluence. Women from more deprived areas in the UK are less likely to take up mammography breast screening (Banks et al., 2002).

Of the women included in the study who were eligible for routine mammography screening (aged over 50) 85% had taken up the offer at some time. This is a slightly higher uptake rate of mammography screening than that reported in the literature for the UK (Cancer Research UK, 2004; Advisory committee on Breast Cancer Screening, 2006). The higher uptake rate is at least partly because this study captured whether the women had *ever* participated in mammography screening whereas the published figures are based on response to each invitation issued. The higher rate may also indicate that women with more interest in the focal health interventions participated in the study. This tendency was addressed to some extent by specifically sampling women who had not used the health interventions at all.

Lupton (1999) suggests that health maintaining practices are incorporated into the life-world of individuals, rather than being stand alone, informed choices, so the interviews began by asking respondents to give an account of their lives in general. The respondents were encouraged to describe their health and health experiences before focusing on their stories in relation to the health interventions. These stories tended to locate the health interventions within broader personal and cohort experiences. This was followed up by probing questions informed by earlier research (Green and Wadsworth, 1998a; Griffiths, 1999b; Watson et al., 1996; Milburn, 1996). Respondents were asked about the way they had approached any decisions about the health interventions including the influence of their social situation and feelings of vulnerability. Where the respondent had not already talked about how they understood the health interventions, this was explored. The interviews were audio recorded, transcribed and coded in NVivo for ease of data retrieval. A translator was used for four interviews.

Initial analysis involved the team each reading selected interview transcripts then identifying concepts for further analysis guided by the theoretical positions outlined in the introduction. Key concepts included the negotiation of medicalisation through the lived body, how women move between different accounts of their body, the limits technology imposes on women's agency in the negotiation and the concept of a visualised body (Howson, 2001; Green et al., 2006). Analysis proceeded by constant comparison of all transcripts (Green and Thorogood, 2004), looking for similarity and differences between each respondent's transcript and those already analysed. Throughout analysis quality assurance processes were used, including: checking of transcripts against the audio-recording and independent identification of concepts for

analysis by more than one researcher before comparing, discussing and refining them. Once final coding was agreed the whole data set was re-analysed to search for previously unidentified themes and possible contradictions. During analysis we looked for patterns of responses that related to the background or previous experiences of our participants, however no clear patterns were found. Instead, a complex variation in responses within each of the sample groups was identified.

The results of analysis are presented here in three sections. First, the theme of mammography screening as a social obligation is explored. This is not an unexpected finding, as it mirrors the findings of previous research in relation to cervical screening. It is briefly explored here in relation to screening mammography because social obligation is an important contextual factor to women's experiences of medicalized embodiment and technological visualization. The subsequent section examines mammography screening and the visualized breast, and the final section of the results considers breast awareness and the lived body. The analysis draws out the differences and potential tensions between the technical visualization and self-awareness of the lived body in relation to women's perceptions and experiences. The themes are illustrated with quotations from the interviews. Where women expressed views that were radically different from or contrary to our main findings we describe these minority views and provide illustrative quotations.

Mammography screening as social obligation

Sociological research has found that participation in cervical screening is motivated at least in part by notions of self-responsibility and social obligation rather than a rational choice based upon an understanding of risk (Howson, 1999; Bush, 2000). The

women in our study expressed similar views, presenting mammography screening as something automatically taken up when offered, a routine social obligation accepted without question:

I just think, something that you've got to have done. They send the letter through the door, up to you to just go. I don't necessarily think about it. (Woman 96)

I've had breast screening and cervical smear tests. I always go for them. I've had two or three, I think, of the, the breast...and it hurt and...But I think I'd probably always go for my smear tests and my breast screening. (Woman 26)

A sense of obligation was not only expressed in relation to women's own behaviour. A few interviewees in this study generalized their comments to other women, communicating a sense that the obligation to attend screening was incumbent on all women:

Oh I think it's essential. Pity more people don't umm sort of take it up. I think a lot of people are frightened about going (Woman 73)

Rose argues that prudence in regard to health has become obligatory and those who do not adopt an active approach to future health, especially women, risk negative judgements (2007: 25). Bush (2000) found that attendance for cervical smear tests was perceived by women as the 'normal' and 'correct' form of behaviour and the

women in her study also applied this to both their own behaviour and that of other women. Many women in our study mentioned fear and discomfort associated with going for screening but nonetheless most of these women attended. Howson (1999) found that overcoming the discomfort and embarrassment of cervical screening was perceived as an integral part of behaving responsibly and demonstrated age related maturity. This might be more relevant to a screening procedure that commences when women are in their 20s, whereas mammography is only offered from age 50 years. However, in our interviews women indicate that personal anxiety or discomfort is not a good enough reason not to attend for mammography screening, reflecting a sense that the 'civilised' response to the threat of illness is greater rationality and bodily control (Lupton, 1995: 9).

Compliance despite discomfort might also be attributed to fear of breast cancer. It was apparent from the interviews that concern about getting breast cancer was omnipresent for most women. Many of the women interviewed knew someone who had breast cancer. However, not all women accepted the invitation to mammography. Reasons for not undergoing mammography included not wanting to be 'interfered with' (Woman 47), 'fear of the unknown' (Woman 44), and not wanting to find anything else wrong with you (Woman 02). For one woman the discomfort of having a mammogram was connected with a concern about damage to the breast. She claimed:

...risk of breast cancer increases the more mammograms you have,
because of the trauma to breast tissue (Woman 46)

Webster and Austoker similarly found that a minority of women expressed concerns about potential damage caused by the pressure exerted during a mammogram (Webster and Austoker, 2006). Up to 35% of women report pain with mammography and this is a recognized deterrent to screening (Miller et al., 2008). Nonetheless, woman 46 is unusual in considering the potential risks of mammography in her decision-making.

Women described mammography screening as a routine obligation that they fulfilled and then forgot about for three years. These findings, although not unexpected, illustrate some of the complexities around the medicalisation thesis including the balancing of risk and benefit and of reassurance and anxiety, and the acceptance by many women of a medicalized, externalized concept of the body in need of expert monitoring. The way mammography screening impacts on women's sense of responsibility for their own bodies, particularly its visual nature and its timing is explored further in the next section.

Mammography screening and the visualized breast

For most women in our study mammography screening offered reassurance by providing a 'window' into the body (Brown and Webster, 2004; Haraway, 1991), and by telling them something about their breasts that they could not know through their own embodied experience:

I feel happy having a mammogram, seeing some kind of in depth look at you, to see if you're alright. (Woman 16 who had breast cancer in the past)

This experience of being outside of their bodies and looking in was also expressed by women in this study in relation to bone densitometry (Green et al., 2006). Mammography is a visual prosthesis – a technology with which to look inside the body in order to detect threats that women themselves cannot see or feel:

I think they're very good, because I know somebody that didn't think there was anything wrong with them, they didn't know anything, and they found they'd got early signs of breast cancer. (Woman 15)

You become very aware... that cancer can come into your life so easily, so rapidly, that you like to think that there's all these things there to help you... the facilities are there to help you...monitor the change in your body. (Woman 08)

The interviews suggest that women compare their own sensory capabilities, their own breast awareness, with mammography technology and find them lacking:

I suppose you take it for granted really. I'm glad that it was there for me to have it done. I mean sometimes I check my breasts and you've got that many little gristly bits and lump...you don't know really whether something's there or not. You know, so I thought well once you have the mammography you think 'well, they've checked it now, that's that done,' you know, so you know there's nothing there. (Woman 30)

Woman 30 talks in terms of ‘something’ (presumably cancer), as foreign, or a threat to her body. The mammogram is the technology that finds this ‘something’ and so by association is looking for things that are alien to, rather than part of, her lived body. Although she checks her own breasts, her account suggests that she is more reassured by the mammogram results than by breast awareness techniques. Another woman talks about having more frequent mammograms, by paying for them, in order to be confident that nothing is changing in her breasts. These accounts remind us that medical visualizations of various kinds become associated with scientific objectivity in a way that other forms of knowing about the body are not (Reventlow et al., 2006; Sandelowski, 2000; Sandelowski, 1994). The elevated position of mammography seems to link, at least in part, with the idea that vision is the most highly valued within a hierarchy of senses (Urry, 2000). Woman 30’s bodily experiences do not give her the same confidence or feelings of safety that she associates with the visualization of the breast and the interpretation of these images by experts. Most women in our study gave mammography considerable legitimacy, appearing to rely upon the technology to understand the ‘health’ of their breasts, and privileging it over breast awareness:

machines that are cleverer than you are looking at you every three years which is a reassurance really. (Woman 04)

I mean, it’s three years, isn’t it, or something like that so I suppose things can change in that time but I always feel because you’ve had a continual flow of negative results you do feel, that’s it, that’s forgotten for a while now and then

when the next one is due you just have it done. It does make you feel safe definitely. (Woman 17)

Most women in our study talked about mammography screening as something that they accepted but which was peripheral to their life:

Yes I've always been and it doesn't worry me. At a certain age, you get a letter from the doctor to attend that sort of thing. I don't really read about it all. It doesn't monopolise my life at all. (Woman 18)

Once I had it done and got my letter to say 'oh, you, you're clear. It's okay.'
And I just carried on with my life. (Woman 30)

Although it may seem desirable that women who receive the 'all clear' can quickly forget about the test, the impact of the screening may be more complex. Reading the women's accounts, there is a strong sense that they value the reassurance obtained from screening mammography but, through the technological imaging process, their breasts become 'virtual breasts', outside of their control and themselves and in need of technology to monitor them. As Brown and Webster (2004) point out, medical technologies can empower and simultaneously confuse and they suggest that a defining feature of new medical technologies is the tension between opening up and closing down of options and subjectivities. Most of the women felt some degree of reassurance from mammography screening and it could be argued that, in the context of a high incidence of breast cancer, this reassurance is empowering to some degree. However, it is also clear from the women's accounts, and from other data from the

wider project, that there is simultaneous confusion since some women are falsely reassured by mammography screening; feeling they are 'OK', that is to say risk free, for the three years after it has taken place (Griffiths et al., 2005; Griffiths et al., 2006). It is almost as though the visualized breasts, the ones dealt with by mammography, are 'parked' for three years. They are not part of the woman's lived body and so remain unchanged, outside of their daily experience. This runs counter to the breast awareness message and encourages women to become less aware of their own breasts between screenings, with potentially negative implications for early detection of cancers by the women themselves. Pfeffer has noted that 'BA [breast awareness] demands a 24/7 state of vigilance whereas, in sending out invitations every three years, the NHSBSP [National Health Service Breast Screening Programme] suggests that a different time frame is important. Women found these conflicting messages about the significance of time confusing' and therefore may assume that screening mammography and breast awareness are 'interchangeable' (Pfeffer, 2004a: 228). However, at present, only half of all breast cancers found in women in the age group invited for mammography screening are diagnosed at screening. The other half, occur in women who do not attend screening or who find the cancer in the time between screenings (Advisory committee on Breast Cancer Screening, 2006).

The women interviewed overwhelmingly expressed trust in both the technology of mammography screening reinforcing their reliance on this visualization for reassurance about their breasts. Although a few women mentioned concern about the accuracy of the results, most attributed this to human error in reading the results thus allowing them to reaffirm faith in the technology itself:

You just go and hope you get the all clear and apart from that you just trust they're doing it correctly. There have been a few scares with the readings of those. (Woman18)

Women had to trust the experts to interpret the results of the mammography for them. The result remains 'out there', communicated through an expert, and contained within the medical arena: it is not something that she can bring into her lived experience. The breast is medicalised, observed and followed up by doctors. It is an unknown to the woman and there is no ongoing link between the embodied and the visualized breast. In the next section we explore women's accounts of breast awareness and the lived body and how this relates to mammography screening.

Breast awareness and the lived body:

On the whole, women's accounts of breast screening focused heavily on the technological intervention of mammography screening. Although these accounts were woven together with narratives about their embodied experience of breast awareness, generally, the women in our study reported more confidence in mammography screening than in checking their own breasts.

I always wonder whether I would be doing it properly enough. The confidence and the fact that I hadn't been checking properly and had missed something and totally ignored it, I don't know. (Woman 17)

A similar lack of confidence about knowing what kind of changes to look for has also been found in other studies of self-examination and breast awareness (Fish and

Wilkinson, 2003; Pfeffer, 2004a). In our study, most women felt mammography was more efficient than breast awareness. For example, this woman has engaged with breast awareness but indicates greater reliance on mammography screening:

I've just gone along for the screening; I've seen the leaflets (about breast awareness). I've actually done (it) in the past, felt for any lumps, etcetera. I know it can pick up most if you have the screen (mammography) you can pick up most tumours fairly quickly. (Woman 02)

One woman explained how she hadn't found a breast lump herself until after mammography screening had found it:

I'd actually done mine (breast awareness) but hadn't found the lump, but when I had the mammogram, and they sent for me to go back, I had another poke around and found it myself. (Woman16)

The benefits of mammography screening lie in being able to visualise small changes in the breast that cannot be detected by touch. The practice of breast awareness asks women to be alert to changes that can be felt. However, the quotations above imply that women directly compare their own sensory abilities with those of the mammogram, and suggest that their embodied sense of breast changes is perceived as unreliable. In contrast, other research has shown that breast awareness can be perceived as empowering, giving women a sense that they can play a role in countering cancer by remaining vigilant (McCready et al., 2005). In our study a few women were clear about their own role in countering cancer, describing how they had

come to develop this. Rather than responding to a broad social obligation, one woman drew on the experience of her mother's cancer to explain her vigilance, which includes both mammography screening and breast awareness in seemingly equal measure:

My mum died of cancer...she was told she was dying - she came and told us and she made us all promise whatever happened that we would check our breasts and we have always done it and that and when it was time we had to go and get our breasts screened, which we did... (Woman 95).

Health professionals, in particular those not involved in mammography screening, sometimes had a role in returning a woman's 'at risk' breast to embodied experience by promoting breast awareness. For example this woman was encouraged by her GP to check her breasts herself:

it's (mammography screening) always been normal, so I haven't ever had anything to worry about there, but I do even so check because...the doctor explained it very carefully to me when I went on to this cream, HRT cream. She said you know there was just a very slight risk of problems with breasts with this cream so just keep checking even though you do use a mammogram service. (Woman 19)

For most of the women in our study visual technology of mammography screening was considered superior to the felt awareness of changes in the breast, reducing women's confidence in their own role in vigilance for cancer except where women had specific reason or support for claiming this role. This lack of confidence seemed

to find expression in how those women who engaged with breast self awareness described it – as something casual – ‘I don’t do anything sort of serious or regular’ (Woman 04) – or done in passing – ‘I’ve done it (breast awareness) to a small extent really... (in the) shower or bath, you do it quickly.’ (Woman18). A few women resisted practicing breast awareness either because they did not consider themselves at risk – ‘it won’t happen to me syndrome’ (Woman 17) – or because they felt sure they would notice if something was different without consciously checking:

I don’t. I suppose wickedly I assume that I’ll notice if there’s any lumps. I don’t know whether I would but I always assume I’ll notice without me prying around to see (Woman 03)

However, as for many women in our study, woman 03 expresses a sense of behaving incorrectly by not taking breast awareness seriously. Even the women who minimize the importance of breast awareness feel some sense of obligation to monitor their own body.

Conclusions

Prevention of breast cancer in the UK has focused heavily on early diagnosis, including screening mammography. From our data, it is clear that, at present, women see mammography screening as key to tackling breast cancer, and afford it great legitimacy. They submit to screening as a routine social obligation and garner reassurance about their health from the procedure. Our study suggests that many women perceive their at risk breasts as something external to the self to be submitted to technological surveillance. Mammography screening remains peripheral to daily

life, something to be endured every three years and forgotten about quickly. The medicalised ‘at risk’ breast requiring expert technological surveillance is ‘parked’ by women for the three years between routine mammography screenings and bears little relation to the women’s embodied experience. The submission to screening, seen by the majority of women as inevitable, seems to result in a sense of loss of women’s agency.

The nature of the mammography as a visualisation of the body’s interior enhances its legitimacy. Women understandably described the technology as providing a ‘window into the body’ and as a source of information otherwise not available to them. Breast awareness techniques based on what can be felt with the sense of touch or through bodily awareness, were directly compared by women with the visualizing technology and found lacking, undermining women’s confidence in their role of monitoring their own breasts. Although a sense of social obligation was also present in women’s accounts of breast self-awareness, only a few women spoke confidently about their role in self-monitoring. It is possible that this was in part due to embarrassment in talking about breast awareness practices compared to the attendance at mammography screening, but many women had already talked in the interviews about their bodily experience of the menopause, which included observations about similar embodied changes.

Our findings suggest for breast screening there is a complex interplay of medicalisation and women’s agency, modulated by the nature of the medical screening technology and the imperative women feel (or do not feel) for their own role in self-monitoring for breast cancer. This, in turn, has implications for health care

policy and practice. An over-reliance by women on experts making decisions about their visualized breast could delay diagnosis, whereas self awareness and confidence in their own agency to detect changes could be beneficial for early detection and treatment. Understanding the uneasy tension between the externalized, medicalised and visualized breast and the 'embodied' breast which is still very much part of women's corporeal identity is important, not only for women themselves, but also for those in the health professions and health promotion services aiming to encourage early detection of breast cancer.

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ⁱ The larger research project involved an additional 35 interviews with women aged 45-64 years, interviews with 58 health professionals and 109 recordings of health care consultations (Griffiths et al., 2003). Of the interviews with women not included in the analysis in this paper, 10 were pilot interviews, 2 women were found to be under

45 years of age due to misunderstanding at initial recruitment through a translator and 19 were with women recruited from secondary care (HRT clinics, bone clinics and breast assessment clinics). The latter were not included for this paper as they had a very different experience of engaging with the health technologies from the rest of the sample of women. A further four interviews were with women who did not agree to their interviews being archived ((Economic and Social Data Service, n.d.)) These were read by the research team and found to contain no new themes and so, as their interviews are not available for wider scrutiny, they are not included here. Where we have quoted from women's interviews, we have labeled the quotations in the same way as the archived interviews. In the interviews reported here, some women mentioned their past experiences of diagnostic mammography i.e. when mammography was undertaken to check the nature of a palpable breast lump. Diagnostic use of mammography is not the focus of this paper.