

# The perceived role of cancer specialists in breast cancer-related arm morbidity care

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## Key words

Breast cancer, cancer treatment-related arm morbidity care, cancer specialists

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With the exception of non-melanoma skin cancer, breast cancer continues to be the most common cancer diagnosis in women and, due to early detection and better treatment therapies, more women are living longer after breast cancer treatment (Ugnat et al, 2005; Vivar and McQueen, 2005; Grunfeld et al, 2006). In light of these changes, it is anticipated that 10 million breast cancer survivors worldwide will be at risk of developing one or more forms of treatment-related arm morbidity (Ferlay et al, 2002; American Cancer Society, 2007; Armer and Stewart, 2011), a condition that can result in physical limitations and disability (Badger, 1988; Thomas-MacLean et al, 2009).

Despite this forecast, it remains unclear which clinicians are, or should be, responsible for providing care to survivors living with treatment-related arm morbidity (i.e. pain, range-of-motion restrictions, and/or lymphoedema). To address this gap in breast cancer follow-up care, the authors interviewed breast cancer specialists in Canada regarding what role, if any, they

## Abstract

This article addresses a gap in the cancer survivorship literature regarding clinician responsibility for the treatment of breast cancer-related arm morbidity. The authors interviewed cancer specialists in Canada about their role in the continuing care needs of breast cancer survivors. Utilising a grounded theory methodology, 14 cancer specialists (medical, radiation, and surgical oncologists) from British Columbia, New Brunswick, Quebec and Saskatchewan, were interviewed. Cancer specialists reported they are not prepared to engage in the care of patients with breast cancer treatment-related arm morbidity. Rehabilitative clinicians (i.e. physiotherapy, massage therapy) trained in lymphoedema care and family physicians were seen as the appropriate practitioners to treat and manage survivors' lymphoedema care needs. Findings indicate that the treatment and management of breast cancer survivors' arm morbidity needs is perceived by cancer specialists to be beyond their scope of practice, interests and expertise. Nevertheless, there is an important role for cancer specialists in educating patients about treatment-related lymphoedema.

thought they should play in treating and managing breast cancer survivors' arm morbidity care needs.

## Treatment-related arm morbidity

An iatrogenic syndrome(s) resulting from breast cancer surgery and/or radiation, treatment-related arm morbidity may comprise one or a combination of the following: numbness of the axilla or lateral chest wall, reduced range of motion of the shoulder, and painful lymphoedema, which can affect the chest wall, armpit, wrist, fingers, and hand, and may result in some form of functional impairment (Kwan et al, 2002; Poole and Fallowfield, 2002; Dawes et al, 2008).

Especially pernicious is the common, but under-recognised, under-diagnosed and often untreated condition of secondary lymphoedema (Moffatt et al, 2003; Corimer et al, 2010; Hodgson et al, 2011). Second only to the fear of breast cancer recurrence, secondary lymphoedema is the most dreaded sequelae of breast cancer treatment from a patient's point of view

(Disa and Petrek, 2001; Armer and Stewart, 2011; Radina and Fu, 2012), and has been described as one of the most significant issues facing survivors at present (Cormier et al, 2010).

The research shows that clinicians may be dismissive and may disregard symptoms, complicating the context of secondary lymphoedema diagnosis and treatment (Collins et al, 2004; Greenslade and House, 2006; Lee et al, 2010). Lee et al (2010) attribute such attitudes and actions to lack of management knowledge, unavailability of appropriate referrals and perception of symptoms as mild (Lee et al, 2010). The results of a consensus meeting of 108 Canadian lymphoedema stakeholders support these assertions (Hodgson et al, 2011).

It has recently been argued that the implementation of less-invasive surgical techniques, such as sentinel lymph node biopsy (SLNB) and more targeted and refined radiation methods, have significantly reduced the incidence of breast cancer-related lymphoedema (McLaughlin

et al, 2008). Although treatment-related morbidity associated with SLNB has decreased, secondary lymphoedema continues to occur (McLaughlin et al, 2008; Cormier et al, 2010) and remains a clinically relevant complication (Helms et al, 2009; Goldberg et al, 2010), including other treatment-related morbidities in the form of pain, and functional compromise (McLaughlin et al, 2008; Helms et al, 2009; Cheifetz et al, 2010).

Although Canadian surgeons have adopted sentinel lymph node biopsy (SLNB) as the standard method of axillary staging for women with clinically node-negative, early stage breast cancer (Quan et al, 2010), patients continue to receive full axillary biopsy along with SLNB if results are positive or inconclusive (Cantin et al, 2001; Lyman et al, 2005).

### Clinician responsibility

Despite the continued prevalence of breast cancer-related arm morbidity, it has yet to be determined which clinicians are formally responsible for diagnosing, treating and managing patients' arm morbidity care needs and, to the best of the authors' knowledge, there is only one study that has addressed this issue (Shaw and Thomas, 2011).

In Canada, as in other Western countries, cancer specialists have traditionally provided breast cancer follow-up care to cancer patients in cancer clinics or community practice (Wood and McWilliam, 1996; Grunfeld et al, 2006; Del Giudice, et al 2009). This type of care typically involves taking the patient's history, and performing a physical examination and an annual mammography to detect for recurrent and new breast cancers, including counselling for cancer-related psychosomatic sequelae (Grunfeld et al, 2005).

However, the diagnosis, treatment, and management of arm morbidity has not been identified as a part of this regular protocol of follow up and continuing care and, as a result, survivors' arm morbidity care needs have been overlooked and continue to go unmet (Gray et al, 2002; Thomas-MacLean et al, 2008).

Moreover, the literature on breast cancer follow-up and supportive care suggests that responsibility for treating and managing women's arm morbidity may be well beyond the purview of breast

cancer specialists who, in Canada, are often the primary clinicians responsible for survivors' follow-up care. Due to a national shortage of oncologists who face rising numbers of long-term cancer survivors in need of continuing care, cancer specialists in Canada have reported feeling overburdened by the growing prevalence of breast cancer survivors (Beaver and Luker, 2005; Vanhuysse et al, 2007). Other findings from the literature indicate that specialists are poorly informed and are ambivalent about addressing non-clinical issues with their patients, and prefer to provide clinical forms of follow-up care (i.e. mammographic examinations, surveillance of recurrent or new cancers) over that of supportive care (Newell et al, 1998; Gray et al, 2002; Mallinger et al, 2005; Del Giudice et al, 2009).

An early study by Wood and McWilliams (1996) on oncologists' perspectives of patient follow-up, centred on interviews with oncologists, highlighted four key roles of responsibility: reassurance of cancer remission, early detection of recurrence, monitoring for treatment-related toxicity, and the gathering of data for clinical trials.

Despite these findings, survivors continue to rely on their oncologists for emotional and psychosocial support, and hold a special regard for the expertise of oncology specialists (Gray et al, 2002; Kantisper et al, 2009). Survivors have also identified supportive care as important to them and have called for more attention to be paid to emotional and psychosocial support (Ashbury et al, 1998; Gray et al, 2002).

However, research has demonstrated that information about arm morbidity and continuing care is less than ideal, contradictory and, in some instances, non-existent (Collins et al 2004; Thomas-MacLean et al, 2008; Lee et al, 2010). A Canadian study (Thomas-MacLean et al, 2005; Thomas-MacLean et al, 2008; 2009; Hack et al, 2010) on arm morbidity showed that, for the majority of respondents, information about and treatment for arm morbidity were not discussed or received.

Similar results were reported by Collins et al (2004), who noted that, although some women were given information on secondary lymphoedema and what to expect in arm usage, others felt inadequately prepared by the hospital

and wanted to know more about what was happening to their bodies.

### Aims

The focus of the authors' study was to investigate breast cancer specialists' perceptions, knowledge and experiences of breast cancer-related arm morbidity, and to discern what role breast cancer specialists thought they should or could play in this facet of breast cancer continuing care. With the exception of a similar study conducted with family physicians in Saskatchewan, Canada (Shaw and Thomas, 2011), to the best of the authors' knowledge, no studies have addressed cancer specialists' knowledge of and experiences with treatment-related arm morbidity, or of the perceived role of cancer specialists in the management of breast cancer-related arm morbidity care.

The study protocol was reviewed by the University of Saskatchewan's Research Ethics Board.

### Methodology

The focus was on subjective interpretations. In keeping with this research tradition, the intention was to capture the subtleties and complexities of breast cancer specialists' perceptions and experiences of breast cancer-related arm morbidity. Data collection and analysis were informed by the inductive grounded methodology of Glaser and Strauss (1967) and Strauss and Corbin (1994) — a general methodology for developing theory, grounded in data that are systematically gathered and comparatively analysed.

### Recruitment

More than 100 cancer specialists (general surgeons, medical, and radiation oncologists) from the provinces of British Columbia (BC), New Brunswick (NB), Quebec and Saskatchewan (SK) were invited to participate in the study via letters sent by mail and fax. These letters were followed by phone calls. The recruitment letters stated that women who have been treated for breast cancer continue to experience physical and psychosocial consequences of treatment that can worsen over time; that little is known about arm morbidity and disability, for instance; and that we sought to interview breast cancer specialists about breast cancer-related arm morbidity care.

Of the specialists contacted, 14 agreed to participate in the study. Noting the reluctance of specialists to participate during the recruitment phase, we asked those who declined their reasons for doing so. Reasons offered included a lack of time to complete the interview, a lack of patients presenting with breast cancer-related arm morbidity, and a lack of interest in the study topic.

Of those agreeing to participate, four were general surgeons, nine were radiation oncologists, and one was a medical oncologist. All oncologists reported that breast cancer is an area of specialisation or they had many years of clinical experience in the area. Ten practitioners were male and four were female, and their age range at the time of the interviews was between 35 and 61 years. Eight physicians had 15 or more years' experience as cancer specialists and six had 14 years' experience or less. The median number of years in specialist practice was 15, and the range of years in specialists practice was 3 to 39 years. Eight practitioners were from SK, three from BC, two from Quebec and one from NB.

Given the low response rate of physicians who agreed to participate in the study, we were unable to recruit equal numbers of specialists (despite targeted attempts) and, as a result, the authors were unable to make any comparisons within or across physician specialisations regarding their perceptions, knowledge and experiences of treatment-related arm morbidity.

### Interviews

We conducted telephone interviews with 14 breast cancer specialists from four Canadian provinces. The duration of the interviews ranged from 20 to 40 minutes. All the interviews were conducted by one of the authors.

Interviews were open-ended because the authors were interested in exploring the subjective perceptions, knowledge and experiences of treatment-related arm morbidity (Bogdan and Taylor, 1975). Prompts and follow-up questions were also employed to elicit both breadth and depth in participants' responses (Breakwell, 1995).

The interview questions included:

- What types of arm morbidities are your patients presenting with?
- How do you respond when a patient presents with arm morbidity?
- How do you rate your knowledge of arm morbidity?

- Do you see cancer specialists having a role in arm morbidity treatment and care?
- Which clinicians do you think should be responsible for survivors' arm morbidity care needs?

### Data analysis

All interviews were digitally recorded, transcribed verbatim and checked for accuracy by the researchers. Transcripts were read and reread in their entirety by the first author to discern similarities and differences within and between the transcripts, and to identify recurrent themes. This method of coding allowed the researchers to include the diversity of knowledge and experiences around treatment-related arm morbidity among the cancer specialists.

Discussions with the second author verified the emergence of these thematic categories, as well as agreement on their similarities and applicability. All identifying information was removed from the data. Written data were secured in locked cabinets in locked offices at the University of Saskatchewan. Audio, transcript, and data analysis computer files are kept on a password-protected computer. Participants did not receive any honoraria for their participation in this study.

### Results

What emerged from the physicians' responses were a series of assumptions and perceptions about the nature, prevalence and severity of breast cancer-related arm morbidity. Physicians' responses varied regarding what they considered to be the more common forms of arm morbidity. For the majority of physicians (75%), lymphoedema was perceived as the most common type of arm morbidity among their patients. Lymphoedema was the condition that specialists most often referred to in our discussions of arm morbidity.

For the remaining 25% of physicians, pain and/or range of motion issues were perceived as more common among their breast cancer patients [than among what other group?]. However, lymphoedema was the condition that many of their patients were more concerned about [than which conditions?] and wanted addressed during follow-up examinations. As one clinician stated: "Women tend to worry more about lymphoedema, but in actual clinical practice, we actually do not see lymphoedema as much as pain and range

of movement limitations" (male, radiation, BC, 15 years of practice).

Although most physicians interviewed reported that lymphoedema was the most prevalent form of arm morbidity among their patients, the condition was commonly perceived as mild in its severity, inconsequential in its effects and increasingly rare. For several physicians, this perceived change in the prevalence and severity of lymphoedema was attributed to recent innovations in cancer-staging techniques (e.g. SLNB) and changes in breast cancer treatment modalities (e.g. breast-conserving surgery, targeted radiation).

Also widespread among several of the physicians was the perception that the procedure of SLNB was now commonly performed and widely utilised by oncology surgeons in Canada. One radiation oncologist remarked: "Most patients will ask if they are free of having arm morbidity since most surgeons now do perform sentinel node biopsy" (male, radiation, BC, 15 years).

However, one surgeon reported that there are a number of contexts whereby surgeons are required to perform both SLNB and axillary dissections on their breast cancer patients. He stated: "There are several factors. One is the surgeon's degree of experience not only with breast cancer surgery in general but with a specific procedure of sentinel node biopsy. Also, in some centres surgeons are required by their department to do a full dissection to prove that they're actually doing their sentinel nodes accurately, and they have to do a certain number of both to prove that they're skill level and their technologies are up to snuff. And then there are other cases where there's a formal requirement because the patients are enrolled in studies" (male, surgical, SK, 20 years).

Physicians were then asked to rate their clinical or formal knowledge of breast cancer-related arm morbidity. Responses included: "poor/could be better" (2), "the same as others" (2), "good" (7), "excellent" (2), and "don't know" (1). The physicians who rated their knowledge of treatment-related arm morbidity as "excellent" were often involved in some type of breast cancer-related arm morbidity research and/or a cancer centre-affiliated lymphoedema clinic. One physician remarked: "I was quite active with the lymphoedema clinic in [city], and I have done a lot of research

I wrote myself, which gives me a kind of an edge" (female, radiation, SK, 3 years).

Physicians who rated their knowledge of arm morbidity as "good" attributed this to their lengthy clinical experience with treating breast cancer patients, and/or because the breast site was an area of specialisation. Of the physicians who rated their knowledge of arm morbidity as "poor", or could not rate it at all, a failure or unwillingness to self-educate on the subject was cited. As one physician answered: "I don't think my knowledge is very good. I think it should be better, but I don't know of any other surgeons [who] have got much more. Maybe we just don't discuss it and maybe, after this discussion with you, I should discuss it more with my colleagues. I would suspect it's about the same as most surgeons that don't really take enough time to put a lot of effort into it" (male, surgical, SK, 18 years).

The physicians were asked how they responded when patients presented with treatment-related arm morbidity. Several approaches were noted among the responses. Depending on the clinical scenario, some physicians reported they treat the condition themselves (e.g. for pain, treat with analgesics and anti-inflammatories; e.g., for lymphoedema, prescribe compression sleeves), and/or will refer their patients to other clinicians (e.g. physiotherapy, occupational, or massage therapy for lymphoedema and range of motion limitations) to treat and manage. One physician answered: "I guess it's different depending on what those symptoms are, and it depends on the elapsed time since surgery. In the initial phase, if patients have significant symptoms – whether it's swelling or pain or disability – then I think most surgeons would get fairly involved" (male, surgical, SK, 20 years).

The authors also asked the physicians if they were "proactive" in monitoring their patients for treatment-related arm morbidity, or if they took a more "reactive" approach and waited for their patients to mention any arm morbidity issues they might be experiencing. Again, several approaches were noted among the physicians' responses.

Approximately 40% of the physicians interviewed (six out of 14) reported that they did not ask their patients if they were experiencing any arm morbidity problems or if they had any related concerns. Some

of these physicians were of the opinion that, if their patients had any issues, they would bring it up during the consultation. Others asked open-ended questions about their patients' health or how they were doing in general, a tactic employed to allow patients the opportunity to bring up any issues or concerns they might be experiencing.

One physician remarked that he preferred this approach because it did not influence the clinical encounter in any undue way. When asked: "When patients come back to see you, do you ask them about any pain or swelling?", they answered: "I don't ask them that way. I ask them if they have any concerns that they would like to tell me about. Usually, I will open up quite a bit and I say 'well that's nothing to worry about', or 'that's common that sort of thing', but I don't ask specifically 'are you having swelling of your arm', 'do you have pain', 'do you have trouble with ROM?'" (male, surgical, SK, 19 years).

Another physician switched from being proactive or reactive depending on the type(s) of treatment(s) her patients received. If a patient were a candidate for or a recipient of radiotherapy, she would be forthcoming with information about possible arm morbidity in both the pre- and post-treatment phases. However, if the patient required surgery only, she would mention the possibility of morbidity initially, but would be less likely to revisit the issue in the future. Similarly, a second physician working in radiation reported that the severity of his patients' lymphoedema and its impact on their day-to-day activities informed the type of action that he took.

Three physicians reported that they regularly asked their patients about any arm morbidity problems or concerns. Mindful that lymphoedema can present in such a way that patients are unaware of it, one physician ensured patients were asked if they noticed any changes in how their limbs looked or felt, or if they noticed any changes in the fit of their clothing or jewellery, which could indicate lymphoedema.

As it remains unclear which group of clinicians are, or should be, responsible for treating and managing breast cancer survivors' arm-morbidity needs, we asked the specialists which clinicians should attend to this aspect of survivors' follow-up care. All 14 physicians interviews cited physiotherapists, followed by massage therapists (six), family physicians (four),

occupational therapists (two), those who provide/fit patients for orthotic and other rehabilitative devices (two) and pain specialists (one), while only one physician cited cancer specialist.

However, one physician remarked that survivors' lymphoedema should be treated by specially trained practitioners and should not be left to generalist physiotherapists, who would lack the necessary knowledge and skills to appropriately treat and manage the condition: "I personally think there should be an occupational therapy or physiotherapist who is trained in manual lymph drainage and decongestive physiotherapy and who knows how to take care of lymphoedema. I don't think a regular physiotherapist or massage therapist can really deal with it" (female, radiation, SK, 3 years).

Although all the physicians regarded rehabilitation therapists as the appropriate practitioners to treat and manage breast cancer survivors' arm-morbidity care needs, some physicians were aware of, and referred to, barriers that could problematise patients' abilities to access these practitioners. One physician mentioned that they had limited physiotherapy support at their cancer centre, and another referred to reimbursement issues with rehabilitative practitioners, whose services are no longer or are only partially covered by provincial healthcare plans, resulting in out-of-pocket costs to patients who do not have private, supplemental health insurance:

"There are only a handful of massage therapy practitioners and, because of their position in the healthcare system, they are often not remunerated by the provincial healthcare plan. So, I tend not to refer my patients to them, but my first line of referral tends to be the physiotherapists who have a pneumatic pump" (male, radiation, BC, 15 years).

### Role of cancer specialists and family physicians in arm morbidity care

Participants overwhelmingly agreed that rehabilitative clinicians should be involved in the treatment and management of survivors' arm-morbidity care needs, but showed little support for physicians to play an active role in this aspect of survivors' continuing care.

For some physicians, the responsibility for the treatment and management of

survivors' arm-morbidity needs was seen as beyond the scope of practice of breast cancer specialists, whom they see as responsible for treating the disease, monitoring patients for recurrence and providing palliative support where necessary. One surgeon remarked that his role was one among many but, in the case of treatment-related arm morbidity, it was to identify the condition(s) and refer patients to the appropriate clinician(s) to treat:

"I see mine as one role in an array of roles and one of my bit roles is to help identify if there is a problem and then send it off to the appropriate place. I'm a surgeon; I don't manage lymphoedema per se. Monitoring for ongoing disease and then just being supportive with all those problems that come up and directing to an appropriate place. Sometimes just to be somebody who listens" (male, surgeon, SK, 19 years).

Time constraints and lack of expertise in the treatment and management of arm-morbidity issues were also cited as reasons cancer specialists should not be involved in this aspect of survivors' continuing care.

Meanwhile, one specialist remarked that, although monitoring for treatment-related arm morbidity fell within his purview of care as a cancer specialist, it was not his role to treat the condition, but to refer to others who could: "Personally, I think it's part of my responsibility to follow it up. I would look for those things, ask those questions and make sure that they don't have anything, and we can direct them to appropriate healthcare workers. So if they need physio, or if they need massage or something, then we could initiate that" (male, radiation, SK, 25 years).

Although only one respondent envisioned a role for cancer specialists to play in the management of survivors' arm-morbidity care needs, three specialists saw a role for primary care physicians because they often see their patients on a regular basis and would be the clinicians most likely to diagnose their patients with the syndrome(s).

## Discussion

Treatment-related arm morbidity in general, and secondary lymphoedema in particular, remain a reality for many breast cancer survivors despite recent innovations in treatment and staging protocols. As a result, survivors continue to experience physical and psychosocial consequences of treatment

that can result in functional impairment, disability and chronic pain (Thomas-MacLean et al, 2010; Jeong et al, 2011). Treatment-related arm morbidity can also negatively affect survivors' health-related quality of life (Badger, 1988; Dawes et al, 2008), problematise familial relationships (Radina and Armer, 2001), disrupt paid and unpaid work practices (Thomas-MacLean et al, 2005; Quinlan et al, 2009), and limit or end participation in leisure and physical activities (Thomas-MacLean et al, 2005; Radina, 2009).

Findings from the interviews suggest treating and managing breast cancer survivors' arm-morbidity care needs is perceived as beyond the scope of practice, expertise and interests of breast cancer specialists – whose primary responsibilities include diagnosing and treating breast cancer; monitoring for new breast cancers, recurrence and treatment-related toxicity; and providing psychosocial and palliative support when required.

In particular, physicians' responses indicated misunderstandings concerning the continued prevalence and severity of breast cancer treatment-related lymphoedema. Among the misunderstandings were beliefs that secondary lymphoedema is of limited consequence, infrequently disabling and increasingly rare due to recent innovations in breast cancer treatment and staging protocols. Despite these misconceptions, the majority of specialists rated their knowledge of arm morbidity as "good" or better than average, due to extensive clinical experience with treating breast cancer patients.

However, the majority of physicians (among them those who reported their knowledge as good or better than average) did not inquire about, examine or monitor their patients for physical signs of secondary lymphoedema, preferring to let their patients set the examination agendas.

Participants unanimously agreed that rehabilitative practitioners, particularly physiotherapists trained in treating lymphoedema, should be the clinicians responsible for providing of this type of rehabilitative and continuing care. There was also some, albeit limited, support for family physicians to be involved in arm morbidity surveillance and care because of the regularity with which they see their patients (e.g. for regular physical examinations and for other morbid conditions). With the

exception of one specialist, there was no support for cancer specialist involvement in treating and managing survivors' lymphoedema care needs.

Despite the finding that the treatment and management of breast cancer survivors' arm-morbidity care needs are seen as beyond the purview of cancer specialists' practices, there is a role for specialist involvement in this aspect of survivorship continuing care, nonetheless. To provide patients with optimal supportive cancer care throughout their treatment trajectories, there is a need for cancer specialists must be better educated about the complex nature of arm morbidity and, especially, treatment-related lymphoedema, so they can provide their patients with the necessary information, guidance and support they will need to prevent and/or manage this condition (Hodgson et al, 2011). One compelling reason for doing so is because patients may not be aware of arm morbidity themselves; relying on patients to raise concerns may be problematic and could result in treatment delays.

To address identified gaps in care, breast cancer specialists must take a more proactive role by asking patients about any lymphoedema-related issues or concerns they might have, and discussing with patients lymphoedema risk-reduction practices. They should also regularly check patients in the postoperative period for signs (e.g. swelling, skin integrity) and symptoms (e.g. feelings of heaviness) of lymphoedema, and ask patients direct and specific questions about any changes in embodied sensations, and/or in the appearance or fit of clothing and jewellery.

Also, educating patients about treatment-related lymphoedema and self-management techniques is both important and necessary for effective self-management and risk-reduction, and to make lymphoedema and its impact better understood (Fu et al, 2008; Hodgson et al, 2011; Radina and Fu, 2012). Although these goals may be beyond the scope of practice for many specialists, particularly given time constraints, referrals to rehabilitation professionals would also positively affect care. These practices can easily be incorporated into regular treatment and follow-up well appointments.

Early detection to reduce the risk of arm morbidities – particularly chronic lymphoedema – as well as to improve outcomes is both necessary and critical,

and breast cancer specialists are well positioned to help improve the early care of breast cancer patients with arm morbidity, especially when contact with GPs is limited and when referrals to rehabilitation specialists is required.

### Conclusion

There were important limitations to this study that can guide future research. The response rate of breast cancer specialists was low (approximately 14%) and, therefore, results cannot be generalised to all cancer specialists. In addition, we were unable to make any comparisons within or across breast cancer specialisations, and the experiences of medical oncologists was under-represented.

It would be useful to know the mediating role that breast cancer specialisation plays in physicians' knowledge and experiences of treatment-related arm morbidity, as well as the kinds of knowledge and experiences of arm morbidity that are particular to each of the specialisations. Secondly, specialists who participated in this study may be representative of clinicians who are more interested or who are better educated about arm-morbidity issues, thereby revealing a selection bias.

Indeed, according to Chung and Xu (2008): "The rehabilitation of patients diagnosed with breast cancer has taken on an increasing importance because of the importance of quality of life for patients with cancer in general. Breast cancer patients need rehabilitation programmes that are systematically designed by healthcare professionals to support and improve their quality of life." As more women are living longer after treatment for breast cancer, establishing rehabilitation programmes for survivors that also address their treatment-related arm morbidity concerns is paramount and should become a distinct phase of oncology continuing care (Silver, 2007).

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