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PERSPECTIVES OF BREAST CARE NURSES ON RESEARCH DISSEMINATION AND UTILISATION

ABSTRACT

Objectives

To identify barriers and facilitators to research utilisation as perceived by breast care nurses (BCNs) and to identify BCNs' preferred methods of receiving research based information.

The sample consisted of 263 BCN in the UK and represented a 76.2% response rate.

Data collection was conducted by post and consisted of a demographic questionnaire, the Barriers to Research Utilisation Scale (Funk et al 1987) and questions on preferred methods of dissemination.

Results

The most frequently identified barriers were associated with Communication and Organisation issues, e.g. 'statistical analyses not understandable', 'insufficient time on the job to implement new ideas', 'facilities inadequate for implementation', 'research not reported clearly and readably' and 'no time to read research'. Facilitators included working within a motivated, supportive, research oriented team and time to read and discuss practical implications within specialist networks. BCNs perceived meeting experts, specialist conferences and discussion groups/workshop as the preferred methods for keeping up to date.

Conclusions

BCNs want and need research reports to be understandable, readily available and clearly presented but must improve their research appraisal skills. Relevant organisational barriers should be confronted with support from managers and the multidisciplinary team e.g. time, development and training.

key words: research utilisation, research dissemination, breast care nurses, specialist nurses

PERSPECTIVES OF BREAST CARE NURSES ON RESEARCH DISSEMINATION AND UTILISATION

Background

Incidence rates of breast cancer continue to increase with close to 41,000 reported new cases in the U.K. (Cancer Research UK 2003). Specialist breast care nurses (BCNs) are entrusted with meeting the varied needs of individuals affected by breast cancer. In practice this involves providing specialist advice about diseases of the breast, a range of treatments (e.g. surgery, chemotherapy, radiotherapy, hormonal), genetic risk, lymphoedema, prostheses and actively anticipating and addressing patient concerns.

As clinical nurse specialists, BCNs often assume the role of experts in breast care and have the potential to exert great influence over patients and clinical colleagues. To ensure patient safety and support of clinical governance, it is important that BCNs possess and have the ability to utilise research-based knowledge related to their areas of practice.

Despite the presence of at least one BCN in every hospital that provides breast surgery, there is a scarcity of empirical literature on BCNs overall; even less is known about how BCNs access and utilise information. To date, there is no documentation on their research utilisation preferences, research skills or views regarding research dissemination.

Currently there are well over 400 BCNs in the UK working primarily in breast screening centres, acute hospitals and in primary care (Kirshbaum 2003). In the recent past, in order to ensure safe practice and to comply with the United

Kingdom Central Council (UKCC) [now the Nursing and Midwifery Council (NMC)] guidance on specialist and advanced practice (UKCC 1992), it was strongly recommended that all BCNs should complete a specialist breast care nursing course such as English National Board A11 or N09, receive specialist training in counselling, have a first degree and be working towards a master's degree (Stewart 2000). In recognition of the varied and developing roles of the BCN and to guide extended practice, members of the Steering Group of the RCN Breast Care Nursing Society developed a document entitled *Developing roles: Nurses working in breast care* (RCN 1999). The publication presented breast care nursing practice as a continuum of service. At one end skills necessary for promoting health and breast awareness were presented and at the other end the focus was on specialist and expert practice. Specific stages on the continuum of service have been identified as:

- Promoting breast awareness

- Early identification of breast problems

- Appropriate referral of individuals with breast problems as per national guidelines

- Management of breast conditions that have been investigated and have been found to be benign or malignant, and effects of treatment

- Rehabilitation, follow-up, support and palliative care of individuals following treatment of breast cancer, and support for individuals who have persistent breast disorders. (RCN 1999 p3)

As key members of the Breast Care Team within Breast Units, BCNs in acute settings have continued to extend their practice beyond diagnosis, treatment and early rehabilitation (NHS Executive 1996). Increasingly, BCNs are providing nurse-led clinics in breast care, screening and post-surgical care (Earnshaw & Stephenson 1997, Garvican et al. 1998, Pennery & Mallet 2000).

In light of research utilisation studies of nurses from a range of clinical backgrounds (Funk et al. 1991, Walsh 1997, Dunn et al. 1998, Kajermo et al. 1998, Rutledge et al 1998, Closs et al. 2000, Parahoo 2000, Retsas 2000, Bryar et al 2003), the difficulty of obtaining, appraising and applying empirical research to directly meet the needs of patients is fraught with problems. Within the field of breast cancer, research activity has been particularly abundant and has resulted in an overwhelming quantity of published literature. This presents BCNs with a vital, yet often difficult and time consuming task of keeping up to date with clinical advances. To address the concern that the extent to which research currently informs breast cancer care could be enhanced, an investigation was designed to explore the subject of research utilisation from the perspective of BCNs in the UK.

The objectives of the study were:

- To identify barriers and facilitators to research utilisation as perceived by breast care nurses.

- To identify breast care nurses' preferred methods of receiving research based information.

METHODS

Sample

A national postal survey was conducted to fulfil the study objectives. BCNs in the UK were targeted to provide the sample for the study. A systematic approach was used to construct a comprehensive listing of current BCNs. Identification of the proposed sample was achieved by consulting individual BCNs, regional BCN representatives, individual hospitals and a directory of breast cancer services in the U.K. (Cancer Relief Macmillan Fund 1996). To assist in the identification of potential respondents, a form that introduced and explained the purpose of study was distributed at regional breast care nurse meetings. BCNs were asked to write in their names and contact details and return the form to the researcher in an enclosed self-addressed 'Freepost' envelope. A total of 345 BCNs were identified.

Data collection

Three data collection sources were combined and administered together to all identified BCNs in the UK:

- Demographic questionnaire

- Barriers to Research Utilisation Scale

- Questions on preferred methods of dissemination

A demographic questionnaire consisting of 13 items was developed to collect work related details about the respondents. It included questions about the

respondents' place of work, years of experience in nursing and as a BCN, age, academic and professional qualifications and the number of other BCNs with whom they worked.

The Barriers to Research Utilisation Scale (Funk et al. 1987, 1991) was used to identify the obstacles that BCNs believed prevented them from making use of research evidence and also enabled respondents to record what they believed facilitated research utilisation. The instrument consisted of 29 items printed as statements and five open-ended items. The respondents were asked to rate the degree to which each statement was perceived as a barrier on a scale of one to four (1 = to no extent, 2 = to a little extent, 3 = to a moderate extent, 4 = to a great extent). For each statement an option of 'no opinion' was presented and identified by the number '5'. Open-ended questions invited respondents to rank their greatest barriers to research, record any additional barriers to research utilisation and list their perceptions of what facilitates research. The Barriers Scale is based on The Diffusion of Innovation Theory (Rogers 1983), which describes a pattern of how populations adopt new ideas, information and innovations into their lives. Rogers identified four areas as being particularly influential to the adoption process in general; these were referred to as the adopter, organisation, communication channel and the innovation itself. The Barriers Scale highlights these four areas and refers to them as 'influencing factors'. The four factors are defined as:

- **Factor 1**: Characteristics of the Adopter - the nurse's research values, skills and awareness

- **Factor 2:** Characteristics of the Organisation - the barriers and limitations related to the institution and its functions

- **Factor 3**: Characteristics of the Innovation - the qualities of the research

- **Factor 4:** Characteristics of the Communication - presentation and accessibility of the research

Two additional questions were included to determine which methods of dissemination were preferred by BCNs. The nurses were also asked to rate five methods of dissemination in terms of their usefulness in changing practice: information pack, lecture, guided reading, meeting an expert in the field and discussion group/workshop. In addition, respondents were asked to indicate their most preferred way to keep up to date with innovations in specialist breast care practice.

Pilot study

A pilot study was conducted to confirm that the questionnaires were clear and understandable to respondents. The questionnaires were distributed in two rounds, once to a group of staff nurses (N = 20) and then to a group of clinical nurse specialists (N = 8) who did not work in breast care. Minor changes in wording on the demographic questionnaire and format were made in response. It was determined that for most nurses, it took at least ten minutes to complete the questionnaires, but could take up to twenty five minutes.

Procedures

After following all considered approaches to compile a comprehensive listing of BCNs, a pack including a covering letter, the data collection questionnaires and a return envelope was posted to all identified BCNs (N= 345).

Particular consideration was given to producing a personalised, friendly and professionally presented cover letter. The letter contained details such as the purpose of the study, the nature of participation, confidentiality and coding procedures, an invitation to contact the researcher with additional comments or questions and notification that a summary of results would be available on request. Prospective participants were also asked to notify the researcher about BCNS who had not been contacted, so that they too could be included in the national survey. A separate consent form was not included since a returned set of questionnaires was viewed as an agreement to participate in the study. The only incentive offered for participation was a summary of the final report. A second mailing was sent out to those who did not respond six weeks after the initial round was completed. Instead of a cover letter, the cover note was called a '(gentle) Reminder' and used an informal communication style.

Analysis

Initially, a database of all respondents was set up using Microsoft Access. This included separate fields for recording identification number, name, hospital, address, title of post, date the questionnaires were posted, date reminder

posted, date the questionnaires were returned and if the respondent had requested a summary report.

Data from completed questionnaires were recorded onto SPSS 8.0, which was used for descriptive and inferential statistical analyses. Data were re-analysed by a second researcher to confirm accuracy. Analysis of the Barriers to Research Utilisation Scale was guided by the format specified by Funk et al. (1991). Responses from questions 1-29 of the Barriers Scale were analysed in several stages. Initially, a frequency table was generated for each item (question) to report how many individuals found the item to be a barrier 'to no extent', 'to a little extent', 'to a moderate extent', 'to a great extent' or chose the 'no opinion' option. Then 'moderate' and 'great' options were combined as in previous studies (Rutledge et al 1998, Dunn et al 1998) to allow for a more meaningful discussion of results and comparison between similar studies. Mean and median scores, standard deviations and rank for each item were generated and listed according to the four factors of Adopter, Organisation, Innovation and Communication except Item 27 (*The amount of research information is overwhelming*), which was not assigned a factor by the developers of the scale (Funk et al. 1991)

The one sample Kolmogorov-Smirnov test with Lilliefors corrected p-values (Lilliefors 1967) confirmed that the data were not normally distributed in general and within groups based on independent variable (e.g. region, type of hospital). Therefore, non-parametric test such as Chi Square, Mann-Whitney U and Kruskal-Wallis tests were performed to compare responses to the 29 barrier items with selected independent variables.

Responses to the open-ended questions were transcribed onto two word-processed documents. The first document consisted of responses about additional barriers to research utilisation. The second document consisted of facilitators to research utilisation.

Comparisons were made between findings from this study and similar investigations in which the Barriers Scale was administered.

Factor analysis

The Barriers of Utilization Scale has undergone extensive validation since its original development by Funk *et al.* (1987); factor analysis was integral to this process. Briefly, factor analysis is a method of data reduction, in which many variables are 'reduced' or 'grouped' into a smaller number of factors (Dixon 1997). It is a complex statistical technique useful in differentiating between multiple variables or a phenomenon with multiple parts. In Funk and colleagues' work, the number of variables was reduced down to four factors identified as Communication, Organisation, Adopter and Innovation.

Despite the rigour and very large sample size of 1,948 individuals used in the development of the Barriers Scale, it could not be assumed that the responses of BCNs in the UK would necessarily fall into the same factors as those in the original study developed in the USA. To address this uncertainty and to provide further validation for the use of the scale, a factor analysis exercise was conducted using data collected in the current study as the sample size was sufficiently large enough to consider such an undertaking (Dixon 1997).

A factor analysis was calculated using the Generalised Least Squares Extraction Method and the Varimax with Kaiser Normalisation Rotation Method on SPSS. Unfortunately, the original authors had not specified how they had coded the 'no opinion' responses despite mentioning that they could be used in the factor analysis. Following discussions with two statisticians, these responses were coded as 'zero' and as 'missing values', and compared. An alternative approach would be to re-code all values in the scale and insert the 'no opinion' answers as '3' to reflect a neutral answer, though this was not attempted. Comparisons of results were also made between not limiting the number of factors and a limit set at four factors.

RESULTS

The sample

In total 263 out of the 345 identified BCNs responded to the survey. This corresponded to a response rate of 76.2%.

The sample represented 13 geographical regions. The majority of the sample (57.8%) worked in district general hospitals and 22.4% were based at teaching hospitals. Most respondents (76%) were between 30 - 49 years of age. Eighty percent of BCNs in the sample were currently undertaking or had completed a post-basic breast care nursing course. One hundred and eighty-eight nurses (71.5%) had obtained a diploma or higher academic qualification. In a breakdown of these qualifications it was found that 41.4% had a diploma in nursing, 24.3% had completed a first degree and 5.7% had attained a master

degree (Figure 1). In addition, 31.2% of the sample were currently enrolled in or had completed a research course, most often as a module for a first degree.

It was also determined that most breast care nurses in the study (76.4%) worked with other breast care nurses, compared to 23.2% who worked alone. In terms of breast care nursing experience, slightly more than half (51.7%) of the sample had been in their current post for over five years.

A series of Chi Square cross-tabulations were conducted to explore associations between potentially significant demographic variables. Significant relationships at $p < 0.05$ were found between *type of hospital* and *having a master's degree* ($\chi^2 = 9.32$, df = 1, p = 0.002); a result that indicated that BCNs with masters degrees were more likely to work in specialist teaching centres as opposed to district general hospitals. Another significant relationship was found between the *type of hospital* and *working with other BCNs* (yes or no) ($\chi^2 = 3.98$, df = 1, p = 0.045). These results indicated that BCNs in district general hospitals were more likely to work alone compared to their colleagues at specialist centres.

Research dissemination preferences

Participants were asked to rate a list of five methods of research dissemination in terms of their perceived usefulness in changing practice. According to the percentage of responses rated 'moderately' or 'greatly useful' all methods scored at least 70.6%. Meeting an expert was identified as being the most useful (94.8%), closely followed by discussion group/workshop (92.0%), lecture (85.6), guided reading (75.1) and information pack (70.6%)(Figure 2).

When asked to record their most preferred way to keep up to date with innovations in specialist breast care practice, conferences (which included any mention of networking, peer group meetings, specific study days as opposed to a formal lecture) and discussion/workshops were selected most frequently (Table 1). In addition to the original five methods of dissemination, literature searching and guided reading were also reported as a useful means of dissemination.

Table 1: Most preferred method of dissemination for Breast Care Nurses N = 263 (response to open ended question)

Method of dissemination	Frequency	Percent of Sample
Conferences	69	26.2
Discussion group/workshop	68	25.9
Lecture	34	12.9
Reading	29	11.0
Meeting an expert	20	7.6
Literature searching	16	6.1
Guided reading	14	5.3
Information pack	8	3.0
Not answered	5	1.9
Total	263	100.0

Barriers to Research Utilisation

The Barriers to Research Utilisation Scale identified problems with communication and the organisation (Table 2). The highest-ranking barrier items were 'statistical analyses not understandable' (communication), 'insufficient time on job for implementation' (organisation), 'facilities inadequate for implementation' (organisation), 'research not reported clearly and readably' (communication), 'no time to read research' (organisation) and 'relevant research not compiled in one place (communication).

Table 2: Ranked Barriers to Research Utilisation for Breast Care Nurses N=263

Rank	Barrier (item number)	Category	percent (moderate +great)
1	Statistical analyses not understandable (3)	Communication	72.6
2	Insufficient time on job to implement new ideas (29)	Organisation	66.9
3	Facilities inadequate for implementation (6)	Organisation	63.5
4	Research not reported clearly and readably (24)	Communication	61.6
5	No time to read research (7)	Organisation	58.9
6	Relevant literature not compiled in one place (12)	Communication	55.9
7	Research not replicated (8)	Innovation	55.9
8	Physicians will not co-operate (18)	Organisation	53.6
9	Literature reports conflicting results (23)	Innovation	53.2
10	Other staff not supportive of implementation (25)	Organisation	52.5
11	Implications for practice are not made clear (2)	Communication	52.5
12	Does not feel capable of evaluating research (28)	Adopter	51.3
13	Results are not generalisable to own setting (14)	Organisation	50.2
14	Nurse is unaware of the research (5)	Adopter	49.8
15	Administration will not allow implementation (19)	Organisation	49.0
16	Research not readily available (1)	Communication	48.3

17	Research has methodological inadequacies (11)	Innovation	47.9
18	Uncertain whether to belief results (10)	Innovation	45.2
19	Does not feel she has authority to change procedures (13)	Organisation	42.2
20	Benefits to changing practice minimal (9)	Adopter	41.4
21	Research is not relevant to nurse's practice (4)	Communication	39.9
22	Isolated from knowledgeable colleagues (15)	Adopter	39.2
23	Research not published fast enough (17)	Innovation	30.4
24	Unwilling to change/try new ideas (26)	Adopter	27.0
25	Conclusions drawn from research not justified (22)	Innovation	26.9
26	Sees little benefit for self (16)	Adopter	22.4
27	No documented need to change practice (21)	Adopter	21.3
28	Does not see value of research for practice (20)	Adopter	18.6

The items with the highest number of "no opinion" answers were those that referred to specific problems directly associated with the research itself. These were grouped as Innovation factors and included statements such as *literature reports conflicting results* (item 23), *research has not been replicated* (item 8) and *research has methodological inadequacies* (item 11).

Comparisons were made with four recent studies from the UK and the US (Funk et al. 1991, Walsh 1997, Dunn et al. 1998, Rutledge et al. 1998) using the top ten barriers from each study (Table 3). The findings of the current study bore most similarity to the findings of a group of American oncology staff nurses where eight of the top ten barriers were the same (Rutledge et al. 1998). In addition, Rutledge and colleagues noticed that for some questions, over twenty percent of responses were recorded as 'no opinion'. Upon closer examination, it was discovered that all these questions were in the subcategory of Innovation.

In the present study the questions with the highest number of 'no opinion' answers were also all in the Innovation subcategory.

Table 3: Comparison of Top Ten Ranked Barriers to Research Utilization Items in U.K. Breast Care Nurses Study with Previous Studies

Barrier Item	Rank of barrier items within each study					
	UK BCN	US Nurse clinicians Funk *et al.* 1991	US Oncology staff nurses, Rutledge *et al.* 1998	US Oncology managers CNS, Rutledge *et al.* 1998	UK 1/3 Palliative care CNS, Dunn *et al.* 1998	UK Post registration students, Walsh 1997
(3) Statistical analyses not understandable	1	8	1	2	2	1
(29) Insufficient time to implement new ideas	2	2	4	3	1	5
(6) Facilities inadequate	3	9	-	-	6	9
(24) Research not reported clearly and readably	4	-	7	7	7	7
(7) No time to read research	5	10	3	4	8	10
(12) Literature not compiled in one place	6	-	8	-	5	-
(8) Research not replicated	7	-	-	-	-	-
(18) Physicians will not co-operate	8	4	10	-	3	4
(23) Conflicting reports	9	-	-	-	-	-
(25) Other staff not supportive	10	6	9	-	-	3
(2) Implications for practice are not made clear	10	-	5	5	-	-

Non-parametric testing was used to determine specific relationships between three key demographic variables considered to be potentially important in terms of their responses to the Barrier Scale: *type of hospital, academic qualifications* and *work with other BCNs.* Significant values (p < 0.05) and their interpretations using the Mann-Whitney U Test are shown below (Table 4).

Table 4: Comparison between responses to Barriers to Research Utilisation Items and Demographic Variables (Mann-Whitney U Test) N=263

Grouping variable	Barrier item	Mann-Whitney U	Z	p	Interpretation
Type of Hospital	(18) physicians will not co-operate	7068.00	-2.340	0.019	More of a barrier for nurses in DGHs
Degree	(25) other staff not supportive of documentation	5070.00	-2.140	0.032	More of a problem for those who do not have a degree
Work with other BCNs	(1) research articles not readily available	4727.50	-2.774	0.006	Greater barrier for those who work alone
Work with other BCNs	(2) implications for practice not clear	4691.50	-2.209	0.027	Greater barrier for those who work alone
Work with other BCNs	(4) research not relevant to nurse's practice	3711.50	-2.707	0.007	Greater barrier for those who work alone
Work with other BCNs	(5) nurse unaware of the research	4739.50	-2.587	0.010	Greater barrier for those who work alone
Work with other BCNs	(15) nurse is isolated from knowledgeable colleagues	4551.50	-2.952	0.003	Greater barrier for those who work alone
Work with other BCNs	(17) research articles not published fast enough	3789.50	-2.262	0.024	Greater barrier for those who work alone
Work with other BCNs	(20) nurse does not see value of research for practice	4348.00	-2.988	0.003	Greater barrier for those who work alone

Work with other BCNs	(23) literature reports conflicting results	4224.00	-2.668	0.008	Greater barrier for those who work alone
Work with other BCNs	(26) nurse unwilling to change/try new ideas	4898.00	-2.362	0.018	Greater barrier for those who work alone
Work with other BCNs	(28) nurse does not feel capable of evaluating quality of research	4906.50	-2.318	0.020	Greater barrier for those who work alone

The results show that when compared to nurses who work in specialist centres, nurses who work in district general hospitals (DGHs) were more likely to rank *physician will not co-operate* (item 18) as a greater barrier. For BCNs who do not have a degree, *other staff are not supportive of implementation* (item 25) was perceived as a greater barrier.

A particularly interesting finding was that nurses who work on their own, without other BCNs reported significantly higher ranking for 10 items (please see Table 4).

Factor analysis results

The factor analysis exercise identified three distinct factors, which corresponded to characteristics of the Adopter, Innovation and Organisation. In contrast, individual barrier items associated with Communication were not grouped together to form a discrete factor group as was demonstrated by the developers of the scale. In the current study, the same three factors appeared in all variations of the factor analysis (e.g. coding 'no opinion' responses as zero and as missing values, not limiting number of factors and setting a limit at four).

Responses to open-ended questions

The inclusion of open-ended questions within the Barriers Scale provided the BCNs with the opportunity to provide written comments. The most frequently recorded 'other' barriers to research utilisation were:

- lack of teamwork

- heavy workload/heavy caseload

- low staffing levels

- low motivation.

Additional barriers were: being physically and emotionally exhausted, lack of research specialists, environment is not research oriented, colleagues have little understanding of research, fear of change and politics and nursing culture is subservient and non-academic.

In response to 'What are the things you think facilitate research?, an abundance of comments were recorded, sorted into eight categories and compared with a very similar set of themes identified by a second researcher. These categories are shown in Box 1.

Box 1: Categorised Summary of Free Text Responses to 'What Facilitates Research' N=263

RESEARCH	NURSE	MANAGEMENT
Understandable (no jargon)	Open-minded	Support
Relevant	Willing	Encourage innovation
Readily available	Knowledgeable	Specific allocations
Clearly presented	Extroverted	Funding
Clearly stated benefits and side effects	Innovative	Higher staffing
	Enthusiastic	Understand role of

The importance of working within a motivated, supportive and research oriented multidisciplinary team was frequently mentioned as were characteristics used to describe individual nurses such as being open-minded, motivated, knowledgeable and enthusiastic. Access to clear, concise and readable research reports appeared to be a common desire as was time to read and discuss practical implications of clinical evidence within specialist networks.

Discussion

As a national survey of BCNs with a response rate of over 76%, the present study provided the opportunity to acquire unique data about this group of specialist nurses. Similar to previous studies, the Barriers to Research Utilisation Scale was found to be 'sufficiently specific to identify areas needing intervention, was quick and easy to administer, had good face and content validity, and adequate reliability' (Closs & Cheater 1994, p770). However, there may be some tensions associated with using the results to inform policy in the UK. It cannot be assume that there are no differences in nursing culture between the original group of American nurses who participated in the scale's validation procedures and this group of British breast care nurses may. It is possible that a British version (Marsh et al. 2001), which made minor word substitutions such as 'doctor' instead of 'physician', or a scale which included issues such as skill mix, staff turnover, shift configurations, morale or motivation, as advocated by Bryar et al *(*2003), would have produced more trustworthy results. The original American version was the only scale available at the time of data collection in the current study.

The greatest barriers were associated with the way nurses perceived research is communicated and problems with the organisations in which they are employed. This confers with previously documented studies of specialist and generalist nurses (Walsh 1997, Rutledge et al. 1998, Dunn et al 1998, Kajermo et al. 1998, Parahoo 2000, Retsas 2000, Bryar et al. 2003).

The greatest barrier, 'statistical analyses are not understandable', exposed a serious concern which was also mentioned frequently within the context of the qualitative data. Understanding research reports appeared to be a problem for this representative group of British breast care nurses. The findings show that seventy percent of the sample had completed some form of academic qualification, the majority of which were at diploma level. This questions the quality and depth of research components in diploma programmes. However, a more worrying finding was that thirty percent of this cohort of specialist nurses did not possess any form of academic qualification. It is not surprising that these nurses identified barrier items that referred to difficulties in understanding research. Competence and confidence in reading and comprehending published evidence related to practice appears to be lacking.

It may be that expressions of uncertainty derived from an inability to critically evaluate research reports can be inferred from a simple analysis of the "no opinion" responses. The items in this group included items that directly targeted the methodological qualities and reliability of research literature.

What appears to be clear is that breast care nurses, as is true with other nurses, want research reports to be understandable, readily available, and clearly presented. They share many research needs particularly with their American colleagues in general oncology (Rutledge et al. 1998) and with nurses who work in other clinical areas (Bircumshaw 1990, Pearcy 1995, Veeramah 1995, Dunn et al.1998). It would appear that respondents in the present study require information that is specific to breast care nursing with clearly stated benefits. Their preferences for contact with an expert in the field, specialist

conferences and discussion groups/workshops seem to reflect the specialist nature of their role. Comparison studies with other groups of specialist and generalist nurses would be required to confirm this observation.

The second greatest barrier, 'insufficient time on the job to implement new ideas', reflects the serious and deep seated problem of trying to practice evidence-based nursing within the National Health Service in the UK. Time to read, evaluate, analyse, disseminate and implement research is extremely limited for breast care nurses. Although practical solutions such as 'bonus incentives', as suggested by one respondent, may be worth considering, such approaches would need to be implemented within the context of enabling the commitment of nurses to clinical governance.

Findings from the open-ended questions uncovered many barriers and facilitators to research utilisation that were not included on the Barriers Scale. The importance of a motivated, research oriented multidisciplinary team was noted frequently. However, when asked about their preferences for dissemination methods, the breast care nurses' answers reflected the value of breast care nursing networks. Whether in the form of specialist conferences, monthly meetings or organised discussions, the data suggest that these nurses view the input of experts and discussions within local networks as useful ways to acquire information essential for improving the way they care for women with breast cancer.

Conclusion

The findings from the current study achieved the stated aims of exploring and identifying the specific barriers and facilitators to research utilisation for specialist breast care nurses, and of determining which methods of research dissemination were preferred by this group of nurses. A disturbing conclusion is that these nurses may not have or believe they do not have the necessary research skills that are so vital to their professional role. As specialist nurses it is assumed that they adhere to evidence based clinical practice and are able to understand, critically evaluate and implement relevant research evidence. As breast care nurses it is important that they are able to provide supportive care to their patients who depend upon them for reliable and expert advice.

If the identified barriers to research utilisation are ever to be reduced or eliminated, BCNs, their leaders and those who take an interest in development and training will first need to recognise that a problem exists. Individual BCNs who are not confident in their ability to understand research reports or particular statistical findings should be encouraged and enabled to address their weaknesses with support from NHS managers and the multidisciplinary team. Leadership and assertiveness training may be helpful to BCNs who, as a group, reported that they had limited influence in implementing innovations into practice. Researchers should continue to strive to produce methodologically sound and clearly reported evidence and to consider how their contributions can be more effectively disseminated, understood and utilised by clinically based colleagues.

Most importantly, it is hoped that all breast cancer nurses will be able to confront the barriers relevant to their own circumstances and work collectively and independently to ensure that the best possible service is provided to breast cancer patients.

Acknowledgments

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