

# A SOUTH AFRICAN PERSPECTIVE ON ONCOLOGY NURSES' NEED FOR CURRENT AWARENESS SERVICES (CAS) VIA THE WWW<sup>1</sup>

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## ABSTRACT

An exploratory study on the information needs of a small group of South African oncology nurses (i.e. nurses specialising in cancer care), and especially their need for current awareness services (CAS), is reported. Participants included an oncologist, five oncology nurses and an oncology social worker from a medical oncology unit, as well as 16 nursing staff members and a unit manager from two oncology hospital wards in Pretoria (South Africa). They all serve the same patients. Individual questionnaires, focus-group interviews and semi-structured interviews were used for data collection. Although the tasks of the participants concerned are mostly not information intensive and therefore seem not to require the use of CAS, there is conditional interest in CAS. This conditional interest is a result of factors such as working conditions (e.g. working hours, demands of the job), a lack of access to information resources, a lack of computer skills and experience in using the WWW, a lack of motivation to use CAS, the expectations of and limited support from management, and the impact of specific tasks and responsibilities on the need for, and interest in, CAS. Findings of the study are used to suggest actions that can be taken for the purpose of intervention and further research in the South African context.

## 1. INTRODUCTION

There seems to be an increasing urgency among people from many professions to improve their work performance and productivity, to keep track of new developments and to adapt to the needs and requirements of a dynamic, global society. This also seems to be true of healthcare professionals and oncology nurses. Baker and Fitch (as cited by Browne, Robinson & Richardson 2002:134), for example, state:

Throughout Europe cancer nurses are striving to meet the challenges of providing quality nursing care amid changing environments that are characterized by advances in drugs and technologies, ageing populations, increasing rates of cancer, increased survival rates, rising costs and increasing economic constraints.

There is also increasing interest in the needs of cancer patients (Ankem 2006).

In oncology nursing literature, the need for evidence-based practices, for lifelong learning, for changing methods of information dissemination and for the increased use of information and communication technology (ICT), the increased demand relating to patients' information needs and the need for patient education are especially stressed (Fourie & Claasen-Veldsman 2005).

Current awareness services (CAS) have, for many years, been proclaimed in library and information science (LIS) literature as being important to those who wish to maintain a competitive edge (Fourie 2006; Kemp 1979). It has been argued that the advantages of CAS include the ability to keep track of trends, new research findings, new products, new developments, the latest publications, conference calls for papers and job advertisements. CAS, however, also has side effects such as information overload, information anxiety and lack of time. Initially, CAS was available only to those who could afford it. Over the last decade, however, CAS has increasingly been made available free of charge via the World Web Web (WWW). Theoretically, this should imply an increased interest in CAS and the increased use of CAS – which is not necessarily the case.

In 2005, Fourie and Claasen-Veldsman explored examples of WWW CAS available for oncology nurses, as well as the reasons why they should use these services. The reasons they identified included the following: career development; coping with the pressure for improved health care; fulfilling the need for patient education and information support; staying abreast of developments concerning the occupational environment as well as of societal trends; societal expectations regarding oncology nursing practice; ethical dilemmas and dealing with these; trends towards collaboration and partnership; research priorities and practice; administrative issues; solutions to

typical problems being reported; educational issues; trends in their organisation; resources available to patients; and IT developments. The services Fourie and Claasen-Veldsman (2005) identified included services provided by the following: professional associations (e.g. through regular monitoring or web-monitoring software); professional journals (e.g. through tables of contents, tables of contents services or RSS feeds); electronic newsletters; book-alerting services; electronic discussion groups; the monitoring of websites with noteworthy content; portals; weblogs; and news-filtering services. For each type, they offered a number of examples.

### **1.1 CLARIFICATION OF TERMINOLOGY**

Oncology is the field of medicine devoted to cancer and the study of tumours, while oncology nursing is concerned with the nursing of cancer patients.

Although numerous definitions have been offered in LIS subject literature for CAS and alerting services (with the latter often being used interchangeably with CAS), the emphasis always falls on the fact that these are services used to help people to keep track of current developments and the latest information. Fourie (1999:382) defines WWW CAS as

a selection of one or more systems that provide notification of the existence of new entities added to the system's database or of which the system took note (e.g. documents, web sites, events such as conferences, discussion groups, editions of newsletters). CAS automatically notify users or allow users to check periodically for updates. The entities can be specified according to users' subject interests or according to the type of entity (e.g. books or newsletters).

### **1.2 PURPOSE OF THE EXPLORATORY STUDY**

With the survey, we attempted to determine the need for, and interest in, CAS amongst a specialised group, namely oncology nurses. We intend to use the findings to promote the use of WWW CAS that is available free of charge and to refine our research methodology to enable us to undertake more extensive local surveys, as well as internationally comparative studies. This could pave the way for similar studies concerning other healthcare professionals as well as increase support regarding patients' information needs. Amongst other things, we focused on

- (1) the impact of the task environment;
- (2) the need for information and CAS;
- (3) the barriers to information seeking and the use of CAS;
- (4) interest in learning about CAS.

## 2. SETTING

An exploratory study based on purposive, convenience sampling was conducted at a medical oncology clinic and in two oncology hospital wards in Pretoria (South Africa). One of the wards mostly treats patients receiving intensive chemotherapy, stem-cell transplants, etcetera, while the other treats patients who are terminally ill (i.e. who need palliative care) as well as children (i.e. who need paediatric care). The sample is depicted in table I.

**TABLE 1:**

CONVENIENCE SAMPLE

Medical oncology clinic	Hospital oncology wards
Head oncologist (management) (1)	Ward unit manager (sister) (1)
Oncology nurses (sisters) (5)	Oncology nurses (sisters, staff nurses, assistant nurses) (16)
Oncology social worker (1)	Care workers (2)

The medical oncology clinic was included, because it serves the same patients as the hospital wards. However, it operates in a different task environment, which, according to Byström (2002) and Vakkari (2003), can impact on information needs. In addition, as will be pointed out, the management, funding and administrative structures also differ.

Although the survey was small in scope, we believe that both groups are sufficiently representative of oncology settings in South Africa for the exploratory purposes of our study.

Permission for the study was obtained from the University of Pretoria's research ethics committee, the head oncologist, the hospital ward unit manager and hospital management. All approved the content of the questionnaire and the interview schedules.

## 3. METHODS

An extensive literature survey showed that very little is known about the information-seeking behaviour of oncology nurses. In one of the very few studies on the information needs of oncology nurses, Fitch, Chart and Parry (1998) report on their information needs with regard to breast diseases. Most of the nurses in their survey believed that there was no gap in their knowledge and that they therefore did not need information. Cobb and Baird (1999) report on their use of the Internet for continuing education, while Anderson

and Bruce (2002) deal with finding the resources needed to work in a freestanding radiation oncology clinic. Nothing could be traced on the provision of CAS for oncology nurses. Slightly more information is available on the information needs of nurses in general. The study by Anthony (2000) on the use and potential use of computer networks by nursing organisations is also worth noting.

Our choice of methods was influenced by the literature on the information-seeking needs of oncology nurses and of nurses in general (e.g. Barta 1995; Cogdill 2003; Dee & Stanley 2005; Estabrooks et al 2003; Gregg & Wozar 2003; McCaughan et al 2005; McKnight 2006; Secco et al 2006; Sundin 2002; Urquhart & Crane 1994; Wakeham 1992; Wozar & Worona 2003), as well as by the more general literature on studies relating to information such as those of Case (2002), Choo, Detlor and Turnbull (2000) and Leckie, Pettigrew and Sylvain (1996).

Taking into account the demanding nature of their jobs and their hectic schedules, we were of the opinion that a combination of methods would be the best for collecting information-rich data. Our initial methods of data collection therefore took the form of

- individual, detailed, semi-structured interviews with management according to an interview schedule (i.e. such interviews were conducted with the head oncologist and the unit manager of the hospital wards);
- self-administered questionnaires;
- focus-group interviews according to an interview schedule (We later moved to semi-structured, individual interviews guided by the questionnaires.)

The (rather detailed) questionnaire was pre-tested with three participants (two from the clinic and one from the hospital wards) and was adapted according to the feedback received (we went through two iterations).

### **3.1 SURVEY INVOLVING THE MEDICAL ONCOLOGY CLINIC**

The survey involving staff from the medical oncology clinic was completed in September 2005. Five participants (sisters and a social worker) completed the questionnaire (one participant could not complete it in time). Except for the two participants with whom we tested the questionnaire, the rest were of the opinion that it was too time consuming. They were also uncertain as to how to answer some of the questions. In addition to the questionnaire, we conducted two focus-group interviews with the clinic staff. For practical reasons, we had to keep the group size small, for there always needed to be nurses to attend to the patients. Two separate interviews were therefore conducted. The first group consisted of three oncology nurses (two sisters and the sister-in-

charge). The second interview was conducted with a sister and the social worker. (Since the social worker counsels patients who visit the clinic, as well as hospitalised patients, we believed that she could add an additional perspective.) One of the clinic staff members could not participate in either of the interviews.

The focus-group interviews with the clinic staff were followed by an interview with the head oncologist.

### **3.2 SURVEY INVOLVING THE HOSPITAL WARDS**

On the basis of the survey involving the medical oncology clinic, we adapted our methods of data collection relating to the hospital staff. Apart from the expected hectic schedules, they were experiencing serious staff shortages: it was obvious that they would not have time to complete the questionnaire and that it would not be possible to arrange focus-group interviews. Since they needed to take care of patients, had to complete rounds with doctors and had other urgent responsibilities, it was almost impossible to free more than one staff member at a time. We therefore decided to use the questionnaire as a guideline for individual interviews and adapted the questions accordingly. If, for example, participants indicated that they did not have access to a computer or the Internet and were not computer-literate, we did not ask them about matters such as services that they were currently using, but rather continued with questions on, for example, their interest in the use of CAS and on training in the use of CAS. (This was the case with many of the participants.)

The survey involving the hospital staff was conducted in January 2006. We started with an individual interview with the unit manager for the two hospital wards (she holds the rank of sister). The interview was conducted according to the same schedule as used for the head oncologist and lasted approximately one hour.

Over two days (a Tuesday and a Thursday), we conducted interviews with the hospital staff members who were on duty. Being on site and available for a large part of the day enabled us to gather data much more effectively, for it provided us with a valuable opportunity to speak to the staff, to glean more information from them and to learn more about their perceptions than would have been possible by using the questionnaire alone. What was also valuable was that we were afforded an opportunity to explain what was meant by concepts such as CAS and the different techniques – hardly anybody had heard of the concepts before. Not only sisters, but also staff at other levels, including the care workers, were included in the individual interviews. Although this method of data collection saved much of the participants' time, it required very intensive interviewing on the part of the researchers.

Both researchers were present during all the interviews. The interviews were tape-recorded with the consent of participants and notes were also taken by one of the researchers. Owing to the nature of the project (exploratory), we did not consider it necessary to undertake a verbatim transcription of the interviews.

### **3.3 QUESTIONNAIRE**

The questions covered the following:

- personal and demographic details (e.g. age, gender);
- qualifications and experience (in oncology as well as in other areas), opportunities to attend training sessions, conference papers presented and papers published (the last two were included, because they could point to a need to use CAS);
- workplace, tasks and job description;
- availability of technology to access information, as well as opportunities for access;
- use of technology to access information (e.g. e-mail, the Internet) and reasons for using the Internet;
- skills that would help in keeping up to date with new information (e.g. computer skills, Internet search skills);
- need for information and information skills;
- awareness of new information and developments;
- methods used to keep up with task-related developments;
- feelings about the importance of CAS;
- knowledge of CAS and ability to use CAS successfully;
- perceptions on management's support for the use of CAS;
- interest in learning more about CAS.

### **3.4 INTERVIEW SCHEDULES**

The following broad categories were covered in the interview with management: the task environment; staff information; access provided to information and to information communication technology (ICT); expectations regarding the use of ICT and information by staff; institutional expectations with regard to the use of CAS by staff; institutional support offered to staff to enable them to become aware of new developments; the importance of various types of opportunities to keep abreast of developments; sharing new information in the institution; problems that might be experienced; advantages expected as a result of using CAS; and interest in searching for solutions (e.g. through training interventions, access to CAS by way of a website, software solutions or collaborative information seeking/work).

The following broad categories were covered in the interview with the clinic staff: changing and dynamic working environments; the importance of keeping up with developments; obtaining information; the effectiveness of resources in allowing those concerned to keep up with developments; sharing information; problems experienced; and enthusiasm with regard to the use of CAS.

### **3.5 SUGGESTIONS REGARDING METHODS OF DATA COLLECTION**

Although our combination of methods seemed ideal for collecting information-rich data and for data triangulation, they needed to be adapted slightly to accommodate participants with very busy and fairly inflexible schedules. The following are suggestions for future projects:

- (1) Individual, semi-structured interviews with management: these worked well and provided very valuable information on the task environment and on the wider context. Since management was more aware of the importance and value of CAS, it also seemed as if members of management were more willing to set time aside – especially if there could be added value for their staff members.
- (2) Very short, self-administered questionnaires regarding demographic details such as workplace, job position, access to computers and the Internet, and computer and information literacy skills. Although participants were familiar with conferences, short courses and workshops as methods of keeping track of developments in their profession, most of them had no knowledge of CAS in the context that we viewed it. They therefore had difficulty in answering questions in this regard. We are of the opinion that self-administered questionnaires might work well after individual or focus-group interviews in which the concept of CAS via the WWW (including free availability) is explained using examples.
- (3) Individual, semi-structured interviews according to an interview schedule/questionnaire. After explaining CAS, valuable information can be collected on, for example, individual perceptions of CAS, on its potential value for participants and on their interest in CAS. Although it takes up much more of the researcher's time, this method of data collection is more convenient for participants and many also feel more comfortable sharing information on an individual basis.
- (4) Focus-group interviews according to an interview schedule. If participants' work schedules allow this, such interviews are still an excellent method of collecting information on perceptions of CAS and for ascertaining the reasons for using/not using CAS. Since focus groups take up more of the participants' time, they could be combined with a purposive incentive such as a free workshop on computer and Internet search skills.



- (5) In expanding our research in the South African context, we need to include a greater number of private medical oncology clinics and hospital wards through a similar approach as that followed here. We also need to include academic hospitals with units for cancer patients. For the latter, it might be appropriate to channel a survey through appropriate branches of the academic library or information service.
- (6) Three other sources of data collection are
  - oncology nurses in tertiary training (e.g. at selected institutions);
  - the South African Oncology Nursing Society;
  - other members of the multidisciplinary team in oncology settings (e.g. social workers, dieticians, pharmacists).

#### **4. SELECTED FINDINGS**

The findings in respect of this exploratory study are based on a qualitative analysis. In this article, we shall focus only on some of the findings, which will be interpreted in relation to the South African context. These selected findings relate to

- the impact of the environment and setting;
- the impact of specific tasks and responsibilities on the need for, and interest in, CAS;
- barriers to information seeking;
- the use of CAS;
- perceptions on the value of information, and interest in using CAS.

##### **4.1 IMPACT OF THE ENVIRONMENT AND SETTING**

In this exploratory study, we focused only on a private (as opposed to a general or government) setting. We found that the daily tasks and the institutional environment have an impact on information-seeking behaviour and on the need to use CAS. This institutional environment includes the management and financial environment and the wider health context. Although there is some overlapping in the treatment of patients by the two participatory groups, there are considerable differences between the environment and settings in which the two groups (medical oncology clinic and hospital wards) operate. Both are however affected by the South African healthcare situation and regulations: as a result of long working hours and poor working conditions, fewer people qualify as nurses, and especially hospitals find it difficult to recruit nursing staff. Young nurses are not staying in the profession for long and many prefer to work overseas (e.g. in the UK, Ireland or the USA). More details on the South African health infrastructure and regulations can be found at the national Department of Health website (<http://www.doh.gov.za/>), at the South African government's information

website (<http://www.info.gov.za/aboutsa/health.htm>) dealing with health and related issues, and at the government's website dealing with the National Health Act (<http://www.info.gov.za/gazette/acts/2003/a61-03.pdf>).

At the time of the study, medical practices and hospitals were experiencing serious problems with regard to profit making from medication owing to the introduction of new health legislation in 2003. Many had to cut back staff and sometimes also had to settle for staff with lesser qualifications. Although inadequate funding is probably an international problem, it seems to have a serious impact in South Africa.

Tables 2 and 3 depict some of our findings for the two settings in terms of the environment.

**TABLE 2:** 

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**FINDINGS IN RESPECT OF THE ENVIRONMENT OF THE MEDICAL ONCOLOGY CLINIC**

<b>Autonomy</b>	The clinic is privately owned by a group of oncologists under the leadership of a head oncologist and a supporting team of oncologists. They make their own decisions with regard to, for example, infrastructure, staff appointments, staff duties, the budget (including subscriptions to information services and fees for conference and workshop attendance). They can also make their own decisions regarding the introduction of CAS for the nurses and other staff members.
<b>Financing</b>	Reasonable funding (including sponsorships by industry) is available, for example for continuing education, CAS and conference attendance. The oncologists frequently attend international conferences and make use of other opportunities for peer interaction. Staff members on other levels (e.g. the nurses, the social worker and pharmacists) are also afforded opportunities to attend conferences, courses and workshops. Although it is recommended, they are not expected to make presentations or to publish.
<b>Infrastructure</b>	Although staff have access to computers and the Internet, (management is of the opinion that the number of computers is adequate), not all staff members have individual access. Some staff members pointed out that this results in a lack of privacy and of opportunities for uninterrupted searching. (They stated that a dedicated computer in a separate room might be a solution.) In cases where access is essential for performing their daily tasks (e.g. for those tasks performed by the sister-in-charge and the social worker), they do however have their own computers.

**TABLE 2 (CONTINUED)**

<p><b>Staff situation</b></p>	<p>The clinic relies on the support of a multidisciplinary team that includes the sister-in-charge, oncology nurses, a social worker, pharmacists, and financial and administrative staff. These staff members receive their instructions from the oncologists and rely on them to keep abreast of the latest developments. For some aspects, they rely on the sister-in-charge. The staff is mostly expected to work normal office hours. They however believe that the work is very exhausting, especially since they spend a lot of time on their feet.</p>
<p><b>Patients</b></p>	<p>Although most patients are from Pretoria and the surrounding areas, there are also patients from elsewhere in the country. Only some of the patients are hospitalised. Interaction with patients in the clinic seems to be less intensive than in the hospital wards owing to the fact that they come to the clinic for shorter periods (e.g. an hour, or a few hours at a time).</p>
<p><b>External pressures</b></p>	<p>The clinic is experiencing pressures as a result of the South African National Health Act and the government's health policy. It needs to ensure that it is competitive nationally and internationally, that it is involved in research, and that the oncologists keep abreast of developments (e.g. through conference attendance, through monitoring the professional literature and through membership of professional organisations and other bodies). Owing to the nature of their tasks, the oncologists strongly believe in the importance of CAS. There is, however, no evidence that other staff members experience similar pressures to those mentioned.</p>
<p><b>External interaction</b></p>	<p>Interaction with national and international institutions of a similar nature, with medical practices and with professional bodies is considered very important, especially for the oncologists.</p>

**TABLE 3:**  
**FINDINGS IN RESPECT OF THE ENVIRONMENT OF THE TWO HOSPITAL ONCOLOGY WARDS**

<p><b>Autonomy</b></p>	<p>A unit manager with the rank of sister is in charge of the two hospital wards. She reports to hospital management. The hospital is privately run and forms part of a large South African hospital group. Although the unit manager and nursing staff may make suggestions concerning continuing education and IT infrastructures, these suggestions need to be approved by hospital management. The hospital staff are expected to follow the oncologists' orders regarding patient treatment. If staff members wish to promote the use of CAS, they will need the permission of hospital management.</p>
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<b>Financing</b>	Considerably less funding and opportunities are available for continuing education and conference attendance. Participants mentioned that it is often only the senior staff that are afforded such opportunities.
<b>Infrastructure</b>	There is one computer with e-mail access available in the wards. Participants (including the ward unit manager) were of the opinion that this is inadequate.
<b>Staff situation</b>	There is a clear hierarchical structure that includes the ward unit manager, sisters, nurses, staff nurses and assistant nurses, and care workers. Serious staff shortages are being experienced and staff members work very long shifts (more than 12 hours per shift) and spend a lot of time on their feet. They are not expected to keep up with new developments concerning the treatment of cancer or the administration of medication, chemotherapy or drugs. These are the oncologists' responsibilities. There is also very little emphasis on academic development their main function is to deliver a high standard of care for patients. There are also day and night shifts. (For the sake of convenience, we included only staff members working the day shift in our survey.)
<b>Patients</b>	Staff members interact only with the clinic patients who are hospitalised, often for periods of several weeks. The interaction with patients therefore seems to differ from the interaction between clinic staff and patients. (This is dealt with in more detail in the section on tasks and functions.)
<b>External pressures</b>	The hospital is experiencing pressures owing to the South African health regulations and health setup. It is against this background that the quality of care provided has to meet the expectations of the oncologists, patients and hospital management.
<b>External interaction</b>	There is less pressure for interaction with national and international hospitals of a similar nature, and with organisational bodies. Some hospital staff members do however have informal contact with staff from other hospitals. The ward unit manager admitted that she and other hospital staff members do not experience the same pressures as the oncologists to be competitive.

Inadequate ICT infrastructures seem to be a major problem, especially in the hospital setup. In expanding our research, we need to focus on at least the following:

- access to the Internet;
- subscriptions to CAS and databases in order to stay abreast;
- opportunities for conference attendance at both a national and international level;

- funding and opportunities for training (including training in information skills).

#### **4.2 DAILY TASKS AND FUNCTIONS WITHIN THE ENVIRONMENT AND SETTING**

Although we found considerable overlapping between the routine, daily tasks of the two groups, there seems to be a difference in the intensity with which some of the tasks are performed and in the extent to which patients rely on the nursing staff for information and emotional support. The following tasks and functions can be mentioned in this regard:

- (1) Administering treatment (e.g. chemotherapy and assisting patients with hygiene, wound care and injections). Although treatment is offered by both groups, the treatment of hospitalised patients is often much more intensive, for example chemotherapy is administered for eight hours a day over a period of five to six days. All treatment is prescribed by the oncologists and the nursing staff must ensure that it is correctly and appropriately administered. The responsibility for keeping up to date therefore lies with the oncologists and not the nursing staff.
- (2) Monitoring and observing patients, with the treating oncologists being provided with appropriate and regular feedback (e.g. monitoring blood pressure, weight, the results of blood tests, fevers). Staff members report to the oncologists, who then take responsibility for the appropriate treatment.
- (3) Administrative tasks. At the clinic, these tasks include patient admission, patient appointments, obtaining the results of tests, ward bookings, updating patient accounts, telephonic enquiries, reception management, switchboard management, organising and preparing for stem-cell transplants, and the management of patient records.
- (4) Staff management. This includes the delegation of tasks, something that was specifically pointed out by the hospital staff.
- (5) Doctors' rounds. A senior hospital staff member needs to accompany the oncologists on their rounds with patients. These rounds often take place twice a day at times that fit in with the different oncologists' schedules.
- (6) Information sessions. Hospital staff members need to lead and participate in information sessions at the time of shift changes. Both they and staff from the clinic are also expected to attend meetings with the oncologists in which information on patients is shared.
- (7) Patient education and counselling. Both the hospital and clinic staff saw this as an important function. Such education and counselling include sharing information with patients, for example on self-treatment such as self-injection and on the implications of treatment processes. Preparing patients for stem-cell transplants or aftercare and answering routine queries were some of the other information-sharing tasks performed by

these staff. The social worker and the hospital staff also mentioned counselling and providing emotional support for patients and their families as further tasks of this nature. Both groups mentioned that there is an increase in the number of patients finding information on the Internet and that patients now ask more questions and have more sophisticated information needs. The nurses are concerned about this trend, since they question the quality of the information that the patients find.

- (8) Daily physical care. Hospital staff members need to ensure, among other things, that patients receive their meals, that they exercise where necessary and that their beds are made.
- (9) Staff training. The hospital group has to offer in-service training for new staff members.
- (10) Supporting hospital staff. This is mostly the duty of the care workers, who have to help with the washing and feeding of patients when necessary and have to help patients with other small tasks.
- (11) Working with children. One of the hospital wards specialises in the treatment of children. Staff members stressed the fact that paediatric care has its own unique demands.

There was strong agreement on the routine nature of their tasks and that the nurses' main role is to care for patients. They also agreed that it is the responsibility of the oncologists to stay abreast of developments concerning patient treatment and to ensure that they give nurses the appropriate instructions. It therefore seems as if the quality of the nurses' work does not depend on obtaining information in order to solve problems and that their tasks are not information intensive – they can thus adequately take care of patients without searching for information. Byström (2002, 2005) and Vakkari (2003) also report on the fact that, where tasks are not considered information intensive, information-seeking behaviour will be influenced accordingly.

The sister-in-charge of the medical clinic, who takes more responsibility for supporting other staff members by providing them with information and who is also involved in conference presentations and research, occasionally uses the Internet, databases and TOCs. Owing to her responsibilities, she experiences a greater need for information. Management also has higher expectations of her and requires her to stay abreast of developments.

Patient care is, however, not just about treatment, but also about guidance/preparation/education and emotional care. From our study of the oncology nursing literature (Fourie & Claasen-Veldsman 2005), it seems as if there are many topics, such as patient education and counselling and emotional support, that are not necessarily covered in the literature typically monitored by the oncologists. It would therefore be useful to monitor the effect that the

use of CAS and the information typically covered in the oncology nursing literature/information resources may have on the job experiences of oncology nurses and on how they meet patients' information needs, that is, can they be better at counselling and educating and can they make better recommendations to the large number of excellent Internet resources by providing these with authoritative information concerning cancer patients? (We can however only test this if the nurses would be willing to use CAS that is tailored-made for oncology nurses. At the end of this article, we make a few recommendations in this regard.) It is also worth noting the article by Cameron and Geana (2005) in which they report on the oncology nurse's role in delivering nutritional information to patients. During the course of their national survey through the Oncology Nursing Society (ONS), it was shown that nutrition-related issues are an important subject in nurse-patient discussions.

In the information science literature, having reliable information has always been strongly associated with effective decision making. From our experiences with this exploratory project, however, it seems as if there is a need to consider the affective dimensions of information (e.g. as far as joy, comfort, job satisfaction, inspiration, etc., are concerned) in professions (such as oncology nursing) where not only physical care (e.g. according to doctors' instructions), but especially emotional care feature very strongly. Other dimensions of information should be further explored in the oncology nurse-patient relationship, as well as the personal motives of oncology nurses in seeking information (e.g., as pointed out by Cameron & Geana 2005, with regard to nutritional information).

When expanding the research project, we can use the categories of daily tasks as the point of departure, with a Lickert scale being employed to indicate the importance of information for successful task completion and the extent to which such information is provided by oncologists. We could also highlight patient education and support as a separate category that can be linked to the information that CAS can gather in this regard.

#### **4.3 IMPACT OF DAILY TASKS AND FUNCTIONS WITHIN THE ENVIRONMENT AND SETTING**

Apart from pointing to the routine nature of most of their tasks, participants especially stressed that their work is very tiring and emotionally demanding. They spend a lot of time on their feet and the hospital staff, in particular, work very long shifts (i.e. more than 12 hours per shift). All complained about the numerous interruptions and about the lack of privacy, which are seen as inhibiting factors when it comes to effective information seeking. As a result of staff shortages and financial constraints, hospital staff members, in

particular, find it difficult to take advantage of opportunities for continuing education and to balance these with responsibilities arising from their personal lives. Apart from the fact that their daily tasks do not require them to search for information, they do not have the time and energy for information searches. However, as we shall explain in our recommendations, CAS that is appropriately planned and is tailored to individual preferences can be a great time saver. (Because participants were not familiar with the concept of CAS, this is something that they do not realise and which therefore needs to be demonstrated to them.)

#### **4.4 FACTORS INFLUENCING AND BARRIERS TO, THE USE OF INFORMATION AND WWW CAS**

We questioned both management and the nursing staff on their perceptions of factors influencing, and barriers to, the use of information and WWW CAS.

Staff from the medical oncology clinic are of the opinion that they do not have enough time and private access to the Internet to use CAS. Owing to the routine nature of their daily tasks, there however appears to be no real need for them to search for additional information. Most of them lack computer skills and skills in using the WWW (this seems to be a major barrier). The sister-in-charge, however, is confident about her skills in this regard. She is also the only one who is currently using some CAS (e.g. TOCs to which the oncologists subscribe and occasional database searches when necessary).

Although lack of skill in using the Internet seems to be a serious problem, there is no guarantee that, once they have received the appropriate training and have mastered such skill, they will be able to overcome the other barriers.

From management's point of view, the clinic staff do not require additional information to complete their tasks. It was also mentioned that they might not always see the value of obtaining information related to their tasks and that many lack the personal motivation to spend time on information seeking.

The hospital staff pointed to a lack of time, to the physical and emotionally demanding nature of their jobs, to inadequate funding and ICT access, and to a lack of opportunities as being barriers to the use of information and CAS. They especially lack computer skills and skills in using the WWW. Although they are all aware of the Internet, most do not know how to use it. Only one participant has received formal training in information seeking as part of her university studies. All of these were also considered to be barriers by hospital management, which also indicated that the impact of staff shortages constituted a further barrier.

In expanding the project, we especially need to obtain more details on management's perspectives, since management plays an important role in



providing the ICT infrastructure, in providing training opportunities and in encouraging the use of CAS.

#### **4.5 THE NEED FOR INFORMATION AND THE USE OF CAS**

As indicated earlier, both nurses and management believe that information is not essential for the successful completion of their daily tasks. In cases where they need to know something, they consult with the oncologists, sister-in-charge, ward unit manager or other senior staff members. There was general agreement that the oncologists are very up to date regarding the latest developments and make every effort to remain so. They are however considered to be less successful in sharing information with the nurses.

Other preferred sources of information are colleagues, reference sources, conferences and workshops. (The last two are especially highly valued as means of continuing one's education and keeping up with developments.) Although colleagues seem to be trusted to provide the correct answers, it was also confirmed that there is not a strong culture of sharing and disseminating new information – senior staff members who are more exposed to new information simply do not have the time for this.

A few participants mentioned that they sometimes receive useful information from patients. More often than not, however, such information is considered to be unreliable owing to the poor reputation of Internet information sources. In an earlier study, Fourie and Claasen-Veldsman (2005) did identify some very useful resources that are aimed at patients. Consequently, by using CAS, nurses could, for example, take note of such resources and bring them to the attention of patients.

Participants were mostly unaware of CAS and therefore of how it could be used in their jobs. In South Africa, all nurses have to be registered with the South African Nursing Council (<http://www.sanc.co.za/>). Some of the nurses are also members of the Democratic Nursing Organisation of South Africa (Denosa) (<http://www.denosa.org.za>). Very few participants are, however, members of national professional societies (e.g. the South African Oncology Nursing Society and the Oncology Social Work Association). They have no knowledge of the international societies or of the information that can be obtained from these societies' websites (e.g. by way of newsletters, conference announcements, etc.). Although the medical clinic subscribes to professional journals, these are not necessarily aimed at oncology nurses. The hospital staff has no access to professional journals or to TOCs. Both groups indicated that they take note of conference announcements and of opportunities for continuing education. We however did not attempt to determine whether they note all important/key events. None of the respondents are using discussion lists, RSS feeds, WWW TOCs and TOCs

services, weblogs, web-monitoring services, news-alerting services or web portals. Except for the sister-in-charge of the medical clinic, most do not have the skills to use these. They are also unaware of the variety of CAS available for free (e.g. as identified by Fourie & Claasen-Veldsman 2005), or how this can help them to save time and improve the quality of patient care.

In spite of the fact that there is no obvious need for information to complete their daily tasks, and despite the barriers we have noted, many participants indicated that they would be interested in learning about CAS, and especially in learning computer and Internet search skills. Staff members who are ambitious with regard to furthering their careers seem especially interested in using CAS, while staff members who are very close to retirement would rather focus on being a nurse and caring for patients and on using their personal time for their families. Although staff are not expected to use CAS, the managements of both groups indicated that they would be interested in further exploring the possibilities CAS may offer to their staff and would support staff in attending a workshop on using CAS. (For most participants, a workshop on computer skills would, however, be a prerequisite. It might be possible to link such training to their continuing professional development and to the requirements of the South African Skills Development Act as to which see: [http://www.labour.gov.za/legislation/legislation\\_display.jsp?id=5976](http://www.labour.gov.za/legislation/legislation_display.jsp?id=5976)).

Overall, the participants were interested in receiving information on medical issues/drug-related issues and on job and training opportunities, as well as information for personal use. This, as well as the difficulty some experience in balancing continuing education with the demands of their personal lives, led us to the idea that WWW CAS and further research should be linked to their interest in acquiring Internet skills for fulfilling their everyday life needs. (They would, for example, like to use the Internet to help their children with their homework, and to impress their children! Putting in the extra time to learn search skills might thus have a dual benefit.) In spite of their interest, participants are not quite sure how they will use such skills, or how they will find the time. However, as mentioned earlier, they do not seem to realise that CAS that is based on push technology can actually save time in contrast to once-off information searching. We will therefore interpret their interest as conditional interest in the use of CAS, and the training, should therefore be streamlined and tailored to meet their needs and circumstances.

## **5. RECOMMENDATIONS**

We acknowledge the impact of the environment and of daily tasks on the oncology nurses' information needs, as well as the fact that many tasks are not

information intensive. However, in the light of the changing demands of society and the increasing use of the Internet by patients, we believe that we need to further explore the potential of CAS and information dissemination and move beyond the barriers that have been mentioned. We therefore believe that we need to promote a culture of using CAS by gradually introducing oncology nurses to the use and benefits of CAS. Although the nurses from the participating groups will not be expected to use CAS, we would like to follow up on managements' interest in creating a CAS culture and in further exposing their staff to CAS – on condition that this does not make further demands on their already busy schedules.

Since participants are not currently aware of the value of CAS, this needs to be our point of departure when promoting a CAS culture, especially as far as information available on patient education and emotional support are concerned, since these activities feature strongly in their daily tasks and in their priorities. Access to timely and relevant information provides an opportunity for personal empowerment. Personal empowerment may also lead to increased quality of service delivery and to a better, more efficient service (even if the current service is considered to be good and to meet the requirements of patients as well as oncologists). The value of information should be realised and substantiated, not only at a task or work level, but also at a personal level. Information noted through CAS is not meant only for problem solving, but can also be a source of support and encouragement for oncology nurses – especially with regard to patient education and counselling. Being empowered and having access to current information may not only give oncology nurses the opportunity to better their clinical skills or to assist them in their day-to-day tasks, but may also equip them better in maintaining their relationships and contacts with patients – one of the facets of their job that they all emphasise. Not only will they then be more knowledgeable and informed about the kind of information that patients may come across on the Internet, but they will also be able to direct them to better sources and to authoritative websites. If the members of a group or task team are all empowered as individuals, this should raise the empowerment level of the whole group and thus pave the way for a more efficiently functioning group and for collaboration with regard to the use of CAS which can once more be a time-saver.

To promote the use of WWW CAS as an information resource for oncology nurses, we recommend that the following should be in place:

- (1) Sufficient access to ICT in an environment conducive to information seeking – such access should allow for private and uninterrupted access (even if only for short sessions). Although personal desktop access to the Internet is the ideal, a dedicated computer in a separate office/corner would also suffice.

- (2) Skills training (including training in computer and Internet search skills) is of utmost importance. Without the necessary skills, it is impossible to use the available infrastructure.
- (3) Management support for the introduction of a culture of using CAS.
- (4) A supportive CAS infrastructure (e.g. a portal) that can be personalised according to the needs of individual nurses. Such a portal could be developed by library and information professionals based on the specific information needs of oncology nurses.
- (5) Encouragement of collaboration and information sharing amongst colleagues.

In addition to attending to the aforementioned aspects, we also hope to expand the project by eventually developing a theoretical model for the use of CAS by oncology nurses, in the process drawing on a wider scope of interdisciplinary literature (e.g. management literature exploring information use at different staff levels, the literature on human information-seeking behaviour, possible theoretical models for coping, monitoring and blunting, dealing with stress, and social cognitive theory (Fisher, Erdelez & McKechnie 2005)).

## 6. CONCLUSION

Although the sample group of oncology nurses used in the exploratory study had hardly any knowledge of WWW CAS, and although there are many barriers to information seeking, it seems as if there is a “conditional” interest in promoting a culture of using CAS. In order to develop an appropriate CAS infrastructure and training opportunities that are tailored to the needs of oncology nurses, we however need to deepen our understanding of the information-seeking behaviour of oncology nurses. This implies that we must take note of the information-seeking behaviour of other healthcare professionals, as well as cancer patients, and must expand our survey to accommodate both national and international comparative studies. A broader national survey, with the adaptation of research methods and questions as explained in the preceding sections, is however a prerequisite.

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## NOTE

- 1 This article is based on a paper delivered at the 10th EAHIL Conference, Cluj-Napoca, 13–15 September 2006. The paper was titled, *Exploring the need for current awareness services (CAS) available via the WWW: oncology nurses as*

*example*, and was made available on the conference website at: ([http://www.eahilconfcluj.ro/scientific\\_programme.html](http://www.eahilconfcluj.ro/scientific_programme.html))

## REFERENCES

- Anderson, KL & Bruce, SD. 2002. Putting your best foot forward in a challenging role: finding the resources needed to work in a freestanding radiation oncology clinic. *Clinical Journal of Oncology Nursing*, 6(4):225–227.
- Ankem, K. 2006. Factors influencing information needs among cancer patients: a meta-analysis. *Library & Information Science Research*, 28:7–23.
- Anthony, DM. 2000. An international comparison of computer networks' use and potential use. *Health Informatics Journal*, 6(1):15–22.
- Barta, KM. 1995. Information-seeking, research utilization, and barriers to research utilization of pediatric nurse educators. *Journal of Professional Nursing*, 11(1):49–57.
- Browne, N, Robinson, L & Richardson, A. 2002. A Delphi study on the research priorities of European oncology nurses. *European Journal of Oncology Nursing*, 6(3):133–144.
- Byström, K. 2002. Information and information sources in tasks of varying complexity. *Journal of the American Society for Information Science and Technology*, 53(7):581–591.
- Byström, K. 2005. Information activities in work tasks. *Theories of information behavior*. Edited by Fisher, K, Erdelez, S & McKechnie, L. Medford, NJ: Information Today (ASIST monograph series):174–178.
- Cameron, GT & Geana, MV. 2005. Functional foods: delivering information to the oncology nurse. *Journal of Nutrition*, 135:1253–1255. (Available online at: <http://jn.nutrition.org/cgi/content/full/135/5/1253>; accessed 23 October 2006).
- Case, DO. 2002. *Looking for information: a survey of research on information seeking, needs, and behavior*. Amsterdam: Academic Press.
- Choo, CW, Detlor, B & Turnbull, D. 2000. *Web work: information seeking and knowledge work on the world wide web*. Dordrecht: Kluwer Academic.
- Cobb, SC & Baird, SB. 1999. Oncology nurses' use of the Internet for continuing education: a survey of Oncology Nursing Society congress attendees. *Journal of Continuing Education in Nursing*, 30(5):199–202.
- Cogdill, KW. 2003. Information needs and information seeking in primary care: a study of nurse practitioners. *Journal of the Medical Library Association*, 91(2):203–215.
- Dee, C & Stanley, EE. 2005. Information-seeking behaviour of nursing students and clinical nurses: implications for health sciences librarians. *Journal of the Medical Library Association*, 93(2):213–222.
- Estabrooks, CA, O'Leary, KA, Ricker, KL & Humphrey, CK. 2003. The Internet and access to evidence: how are nurses positioned? *Journal of Advanced Nursing*, 42(1):73–81.
- Fisher, KE, Erdelez, S & McKechnie, L. 2005. *Theories of information behaviour*. Medford (NJ): Information Today.
- Fitch, MI, Chart, P & Parry, N. 1998. Information needs of nurses regarding breast disease. *Canadian Oncology Nursing Journal*, 8(3):176–182.
- Fourie, I. 1999. Empowering users: current awareness on the Internet. *The Electronic Library*, 17(6):379–388.
- Fourie, I. 2006. *How LIS professionals can use alerting services*. Oxford: Chandos Publishers.
- Fourie, I & Claasen-Veldsman, R. 2005. Disintermediation: using intermediary skills to offer

- oncology nurses opportunities for their own World-Wide Web Current Awareness Services. *Mousaion*, 23(2):196–212.
- Gregg, AL & Wozar, JA. 2003. Delivering Internet health resources to an underserved health care profession: school nurses. *Journal of the Medical Library Association*, 91(4):398–403.
- Kemp, A. 1979. *Current awareness services*. London: Bingley.
- Leckie, G, Pettigrew, K & Sylvain, C. 1996. Modeling the information seeking of professionals: a general model derived from research from engineers, health care professionals and lawyers. *Library Quarterly*, 66(2):161–193.
- McCaughan, D, Thompson, C, Cullum, N, Sheldon, T & Raynor, P. 2005. Nurse practitioner and practice nurses' use of research information in clinical decision making: findings from an exploratory study. *Family Practice*:490–497.
- McKnight, M. 2006. The information seeking of on-duty critical care nurses: evidence from participant observation and in-context interviews. *Journal of the Medical Library Association*, 94(2):145–151.
- Secco, ML. et al. 2006. A survey of pediatric nurses' use of information sources. *Computers, Informatics, Nursing*, 24(2):105–112.
- Sundin, O. 2002. Nurses' information seeking and use as participation in occupational communities. *New Review of Information Behaviour Research*, 3:187–202.
- Urquhart, C & Crane, S. 1994. Nurses' information-seeking skills and perceptions of information sources: assessment using vignettes. *Journal of Information Science*, 20(4):237–246.
- Vakkari, P. 2003. Task-based information searching. *Annual Review of Information Science and Technology*, 37:413–464.
- Wakeham, M. 1992. The information seeking behaviour of nurses in the UK. *Information Services and Use*, 12(2):131–140.
- Wozar, JA & Worona, PC. 2003. The use of online information sources by nurses. *Journal of the Medical Library Association*, 91(2):216–221.