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Nursing Information Behavior (NIB) in the Context of Help-Seeking

Abstract: This research explores two elements of the information behavior of homecare nurses, their commonly identified information drivers and frequently used information leads and conduits. Additionally, information behavior is examined in the context of the nurses' help-seeking motivators.

Résumé : Cette recherche explore deux éléments du comportement informationnel des infirmiers et infirmières à domicile, leurs priorités informationnelles habituellement identifiées et les pistes et comportements informationnels généralement utilisés. En outre, le comportement informationnel est examiné dans le contexte des facteurs de motivation de l'aide à la recherche des infirmiers et infirmières.

1.0 Introduction

The information behavior of nurses can be described contextually using two important elements, namely, their information needs and their preferred sources of information. There is evidence in the literature exploring these facets of information behavior (Corcoran-Perry and Graves 1990; Lange 1992; Giuse, Huber, Giuse, Brown, Bankowitz and Hunt 1994; Spath and Buttlar 1996; Cheng and Lam 1996; Bawden and Robinson 1997; Lathey 1999; Matsuda and Donaldson 1999; Rasch and Cogdill 1999; Dorsch 2000; Pajarillo 2001). Their most usual information needs pertain to patient care topics, such as treatment, medications, diagnoses, and other related issues. Aside from the usual preference for journals and books, reference and procedure manuals, nurses and other health care professionals routinely refer to non-print and non-electronic sources, such as supervisors and colleagues. Nurses care for the sick and provide them assistance with their physical and psychosocial needs, until they achieve stability, regain their previous state of wellness, or achieve a new level of functioning resulting from serious sequelae of varying types of illnesses. Needless to say, information questions that arise while performing this professional role of ministering to their patients need to be addressed efficiently that referring to human sources might be preferred. Previous research described the information behavior of nurses in hospitals and clinics where supervisors, peers and other health professionals can easily be consulted. However, the literature is nil in terms of the use of information among home care nurses who function by themselves as field workers in the community without the usual collegial, administrative and clinical support available in structured healthcare settings. This current research will describe these health field professionals' information needs and sources, including their use of human sources of information.

2.0 Literature Review

Wilson's information behavior can be traced back in the literature from earlier reports describing its theoretical structures of *information needs* and *information-seeking behavior* (1976) to that of its most current framework (2006). It is a broad, collective and encompassing concept that includes the unique aspects of information searching, seeking

and use, and the dynamic interplay of these components. Additionally, it is affected by the context of the user and the environment, as well as the information itself. The interrelationships of these factors are inevitable and requisite when analyzing and describing information behavior (Foster 2004; Niedzwiedzka 2003; Wilson 2000; Dervin 1997).

Practitioners of the nursing profession comprise a community of users whose information behavior can be explained contextually. Nursing information behavior (NIB) includes all the behavior manifested by nurses related to identifying, gathering, processing and managing information (Pajarillo 2006), including such elements as information drivers and frequent leads or sources used.

2.1 Information Drivers

In one of the earlier research conducted about nurses' reasons for seeking information, Corcoran-Perry and Graves (1990) studied cardiovascular unit nurses and found that over three-quarters (76%) of the reasons were direct patient care-related, such as general nursing care, medication administration, nursing care planning, care management, doctor's orders, policies, and patient education; 22% pertained to unit and personnel management (tracking people and equipment, conveying information, transferring data, admission, discharge or transfer); while the rest (2%) were for other reasons, such as a personal need to expand one's knowledge. About similar findings were generated in another study by Lange (1992) of other hospital nurses, except there were just two categories of reasons that trigger the nurses' need for information. These were either patient-focused (such pertaining to medication and medication-related questions), and agency or institution-specific (such as procedures and protocols relevant and applicable to the particular health care organization or setting). The same was true with the study conducted by Giuse, Huber, Giuse, Brown, Bankowitz and Hunt (1994) of nurse practitioners working with HIV clients in a clinic. The triggers for their information-seeking were patient care and treatment-related. Thus, in the order of relevance, the following were cited as their most usual information drivers: (1) treatment protocols/regimen, (2) diagnosis/etiology, (3) disease complication, (4) description of disease, and (5) adverse effects of drug therapy.

Two other studies yielded almost parallel outcomes, except that respondents in these two investigations also cited personal interest on a particular subject matter as an important motivator to find answers to information questions (Spath and Buttlar, 1996), while Cheng and Lam (1996) reported even other interesting reasons, such as keeping oneself up-to-date, preparing for coursework, solving some work-related problems, explaining clinical problems, writing papers for conferences, preparing for lectures, undertaking research, and preparing talks or seminars.

It is evident from previous research that there are internal drivers for nurses to seek information. These are factors from within that cause them to pursue answers to arising information needs. Each nurse has varying levels of knowledge, experience, skills and competencies relating to nursing and patient care issues such as diagnosis, medications, equipment, symptoms, disease descriptions and definitions (Spath and Buttlar 1996; Giuse et al. 1994; Lange 1992; Corcoran-Perry and Graves 1990). The nurse is driven to fill learning gaps or needs identified from or arising out of any particular presenting-patient encounter to achieve the immediate goal of fulfilling role responsibilities and the ultimate result of expanding one's knowledge, skills or competencies. Like other professions, nurses are in charge of their own continuing education and learning to be

able to carry out safe, current and appropriate nursing practice. This also explains other internal drivers relating to one's personal need to know, such as those described by Spath and Buttlar (1996) and the professional drive for advanced education and training mentioned by Cheng and Lam (1996).

Other information drivers are external to the nurse. Nursing practice is governed by regulatory and professional licensing agencies, as well as institution-specific protocols. For instance, fire and safety regulations are mandated nationally by OSHA (Occupational Safety and Health Administration), but their implementation is left to each health care organization. Knowledge and implementation of and compliance with these regulations are contingent on certain intrinsic factors such as building structure. There might be information gaps or needs between the nurse's competence and those dictated by the environment or the healthcare facility. Other examples of these external information drivers include those defined by previous investigations (Spath and Buttlar 1996; Giuse et al. 1994; Lange 1992; Corcoran-Perry and Graves 1990) such as treatment algorithm and regimen, diagnostic procedure protocols, and medication adverse-effects reporting mechanism.

2.2 Information Leads

In terms of preferred information sources, previous research show evidence that nurses have a remarkable propensity for calling on human sources of information when faced with information questions. Corcoran-Perry and Graves (1990) reported that nurses used verbal sources 45% of the time (from fellow nurses and other healthcare personnel), and another 45% relied on written media (patient records and references). There was a small number of nurses (10%) who said they used technical sources (those coming from computer terminals and monitors). Almost the same findings were generated by Lange (1992) where verbal sources comprised 36%, written were 59%, and technical were 5%, as well as the nurse practitioners in Cogdill's study (2003) who used print and human leads equally when confronted with information needs. In another study (Spath and Buttlar 1996, 114), acute care nurses prioritized their choices for information sources in the following order: professional journals, "other nurses," card catalog, films or videos, conferences, CD-ROM databases.

There is not an abundance of research on nurses' use of electronic databases and the Internet. Pajarillo (2001) conducted a case study of nurses' use and evaluation of search databases. He provided training to nurses with little or no experience with the use of search engines and electronic systems, and having them focus on its usability and performance factors. Database features that the nurses identified as most useful for them include its scope of retrieval capability, usefulness of search results, and user friendliness. Retrieval systems should complement the needs and the skill level of users, especially those with little or no experience using them.

Traditional sources of information, such as libraries, librarians and other information services, were likewise not a popular choice among nurses. Previous studies found that despite nurses comprising 31% of hospital employees (Bunyan and Lutz 1991), only about 6% visit the library to pursue their information needs in their clinical practice, education and research. Additionally, about 76% of nurses in this same institution felt there should be more assistance to nurses to effectively use the library. An article by Stephens, Selig, Jones and Gaston-Johansson (1992) found that more than 50% of nurses have not been to the library in six months, and were "less than confident in their library skills." Another study (Modrcin-McCarthy, McGuire and King 1997) underscored the

difficulties with information resources and systems that nurses encounter when faced with any information tasks. More recent research concurred that nurses usually use the library to pursue a personal interest on a subject matter, yet most still rely on personal journal subscriptions (Spath & Buttlar 1996). Cheng and Lam (1996) confirmed that the nurses in their study visit the library at least once weekly (37%), once monthly (31%), once quarterly (14%), and once semi-annually (17%).

In the review of the literature on nurses' commonly used information sources, a few observations are striking. Aside from the usual information leads that are in written format, such as books, journals, manuals, references and patient care records, nurses also use a great deal of verbal sources. These can be from colleagues, nursing supervisors and physicians or other authority figures, and specialized members of the health team such as nutritionists, pharmacists and therapists. Some of the reasons nurses gave for their use of human sources of information were described by Blythe and Royle (1993) as needing quick and precise directions from experienced authorities without having to leave their patients who needed them physically nearby. These oral sources were selected based on the reason for needing the information: for example, patient care needs prompted nurses to consult most frequently colleagues, ward-based information, and their own journals; while for course work, they used libraries and information services. Wakeham (1992) emphasized the importance of accessibility and availability when choosing a source, while Cogdill (2003) found from chi-square analysis that the use of human sources were related to diagnostic information needs, while print materials were used for medication and drug-related questions.

Use of human sources is not only true for nurses, but other health professionals, including physicians and allied medical professionals as well (Gorman, Yao & Seshadri 2004; Perley 2001; Thompson 1997; Smith 1996; Gorman 1995). Health professionals frequently call on human sources of information because of a "need for higher-order information," help-seeking to gain confirmation, guidance or supervision, and that colleagues and superiors understand what is best in their practice (Gorman 1995).

3.0 Research Questions

This study explores the information behavior of home care nurses, focusing on their information needs, commonly accessed information leads, and their use of human sources. Specifically, the research questions are:

3.1 What drivers trigger information-seeking?
3.2 What types of information leads are commonly sought out? What are the reasons for their choices?
3.3 Are human sources called upon for information needs? What reasons are cited for choosing human information leads?

4.0 Design and Methods

Both quantitative and qualitative paradigms were employed in the research design. The study was conducted at the Visiting Nurse Service of New York (VNSNY) Home Care, a large home care agency in the metropolitan New York area. Approval was obtained from the organization's IRB to survey and interview their home care nurses.

Nurses were asked to complete a written survey as part of the quantitative phase of the research. The survey explored situations, issues and questions that trigger their need for information and the resources (personally owned, found in patients' homes, and in the community) used. The respondents were asked to rank these according to frequency of occurrence (of the information needs) and use (of the resources).

The qualitative aspect involved a case study of five home care nurses and three alternates. Each was asked to keep a log of their information needs for a two-week period, noting what triggers these and why they chose to use a particular source. This data log was triangulated with individual interviews and focus group meetings of the same nurses to further explore assumptions and validate conclusions.

5.0 Results and Discussion

5.1 Description of the Survey Respondents and Case Study Participants

A total of 185 nurses (70.6%) consented and participated in the survey, out of 262 nurses in the Adult Care Program in one regional location of the Visiting Nurse Service of New York Home Care. They range from 26 to 72 years in age, with the mean at 45. Most (94%) of the respondents are females, and about 65% work full-time and 35% part-time. Over a third (35%) have associate's degrees, a little more (38%) have Bachelor's in Nursing, and another 12% have Bachelor's in another field. In terms of graduate degrees, 3% have Master's in Nursing, another 4% have this in another field, and 0.4% with a Doctorate in Nursing. The nurse-participants in the survey have a mean of 20 years nursing experience, ranging from a minimum of 2 years to a maximum of 44 years. Additionally, these nurses have a mean of 10.29 years experience in home care nursing, with about the same (9.16) number of years working in VNSNY.

For the case study, five nurses volunteered to participate. All the nurse-participants have many years of professional nursing experience, between 18 to 24 years. One has a graduate degree and the rest have Bachelor's. Three are full-time field nurses, while the other two are team facilitators (nurses who spend some time in the office assisting the nurse-manager when not seeing patients). The case study participants vary in home care proficiency, ranging from 2 to 16 years. Most claim to be skillful with the computer and have used the Internet for 5 to 15 years. Three out of five self-report being information-searching savvy. One of the remaining two claims to have recently begun using information adjuncts, while the other admits not being proficient at all with information search tools.

Based on the above-aggregate description of the survey respondents and case study participants, these home care nurses vary in age, are mostly females with basic nursing education, but quite experienced in their profession and in the home care setting.

5.2 Information-Seeking Triggers

The field nurses rank what drives them to seek information using "1" as the most frequent, "2" as the next, and so forth. Their responses are shown in Table 1 listing computer-related questions as first, followed by treatment (2^{nd}), medication (3^{rd}), diagnosis (4^{th}), and OASIS (assessment) (5^{th}) information needs. Trailing behind are other issues such as care planning (6^{th}), driving or area navigation (7^{th}), billing or payment (8^{th}), agency policy (9^{th}), resources available in the community (10^{th}), clinical practice guidelines (11^{th}), patient demographics (12^{th}), and regulations (13^{th}). The respondents report and add other information needs to the survey list. These include

questions about home supplies, need for medical supervision or consult, questions from the home care office, aide, physician contact, getting physician orders signed, ordering supplies or services, need for nursing supervision, computer tablet, cell phone use, and referral information.

#	Information Drivers	Valid Responses	Missing Values	Mean Rank	Over-all Rank
1	Computer	182	3	6.15	1
2	Treatment	180	5	6.42	2
3	Medication	182	3	6.43	3
4	Diagnosis	179	6	7.46	4
5	OASIS	165	20	7.47	5
6	Care Planning	173	12	7.87	6
7	Driving/Location	176	9	9.19	7
8	Billing	173	12	9.71	8
9	VNSNY Administrative Policy	170	15	10.19	9
10	Community Resources	177	8	10.41	10
11	VNS Clinical Practice	165	20	10.43	11
12	Demographic	171	14	10.72	12
13	Regulatory Issue	164	21	11.19	13

Table 1: Rank Order of Most Frequently Occurring Information-Seeking Triggers, by the Survey-Respondents

Computer issues rate as the top reason for seeking information, with a mean rank of 6.15. The computer-tablet that nurses take with them when visiting home patients contains pertinent information in the form of medical records. Important patient care information, history and documentation is easily accessible and within reach to the nurse. This explains why any difficulties resulting from its use disrupt their work routine, resulting in some form or degree of information-seeking.

Based on the way the other information-seeking reasons are ranked, it is evident that home care information drivers directly result from patient care-related concerns such as diagnosis, medications, treatment, and OASIS; and indirectly from those that pertain to policy, procedures, computer issues and regulatory requirements such as billing.

Scenarios and discussions derived from the case study support how these information needs are ranked. The drive to find essential information is motivated by fundamental nursing values, foremost of which is maintaining the patient's safety. Participants mention the importance of keeping the client safe. An example given relates to a diagnosis-related information driver, such as a patient who fell and refused physical therapy (crucial in establishing an in-home fall prevention program). The nurse was unsure of the nature and severity of the client's medical condition and needed information to assure safety.

Another example given is a situation where a nurse is faced with seemingly confusing medication information (different information appearing on the computer-tablet against those written in the patient's discharge sheet, as well as on the prescription). The patient's safety remains the driving force for the nurse to clarify such ambiguities. In another situation shared by the case study participants, the patient's safety would have been compromised because of very limited services related to the health insurance being managed and requiring pre-approval. Obtaining procedural particulars is necessary to avoid a potentially harmful circumstance for the patient.

The importance of patient safety is echoed in similar examples cited during the interviews. One participant considers her team facilitator function extra critical. She feels she needs to know more and better, to be able to guide the nurses as they provide "safe" care to their patients. Another nurse shares the same safety concern when confronted with using an unfamiliar new type of syringe. This is apparent when she mentions "not wishing to hurt the patient for not being sure how to work the syringe."

Most of the reasons cited center around the goals of nurses, that to deliver efficient and competent care, and to be in compliance with standards, policies and regulations. Some examples of information search situations motivated by these values of efficiency, competence and compliance include: (1) the nurse needing guidance in terms of the management of a patient with low blood pressure, (2) not knowing why the patient's recertification can not be completed, resulting in a delay or disruption in service, and (3) a nurse being uncertain about how to proceed with caring for a patient who is not homebound but requires infusion and therapy services. This drive for efficient, competent and compliant professional practice is also consistent when validated during the focus group meetings. Examples given to support this include circumstances when nurses are faced with problems of communicating and transmitting data using their computer-tablet. They describe this to be a major impediment to their efficient functioning as nurses. One participant verbalize the same sentiment regarding efficiency and competence as strong motivators for information-seeking, adding that "not knowing something and finding out the answer herself was challenging … and eventually [made] her more knowledgeable."

Another clear factor for the nurses' information needs is their personal motivation to learn and know more. Two nurse-participants share this perspective. One of them explains that she "likes reading journals so that she can learn more. Whenever I have some down time, I find myself catching up with reading my clinical journals." Another participant adds that as a nurse facilitator, she "needs to know more things, so that she can easily assist other nurses when they call for help."

The preceding findings describe home care nurses' information drivers to be motivated by their personal desire to learn, the need to comply with policy, standards and regulations, and their professional drive to deliver safe, competent, efficient and compliant care. These motivators underscore the relevance, nature and urgency of information needs surrounding field nurses as they deliver care in the home environment. These situations, issues, and concerns trigger their resulting information-seeking processes.

5.3 Information Leads

Among information sources that the nurses personally carry, the computer-tablet is ranked as their most frequently used information source. It contains their patients' medical records – address, phone number, insurance information, referring party, medical supervision, household composition, diagnosis, care plan, previous days' notes, and interdisciplinary coordination and communication. Other personal resources are ranked in the following order: (2) phone, (3) drug reference, (4) street map, (5) handbook, (6) agency policy and the (7) HELP function of the tablet (containing best practices and other valuable information).

#	Personal Resources	Valid Responses	Missing Values	Mean Rank	Over-all Rank
1	Tablet/Pen Computer (Patient Records)	178	7	1.85	1
2	Telephone	182	3	2.03	2
3	Drug Reference	160	25	4.47	3
4	Street Map	157	28	6.05	4
5	Agency Handbook	154	31	6.76	5
6	Agency Policies	137	48	8.45	6
7	Tablet/HELP function	120	65	8.59	7
#	Resources Found in the Patient's Home	Valid Responses	Missing Values	Mean Rank	Over-all Rank
1	Patient Logs	178	7	2.61	1
2	Prescriptions	172	13	3.07	2
3	Medication Instructions	169	16	3.12	3
4	Discharge Instructions	176	9	3.47	4
5	Health Insurance Information	157	28	5.20	5
6	Referral Forms	155	30	5.45	6
7	VNSNY Patient Folder	170	15	5.56	7
#	Community Resources	Valid Responses	Missing Values	Mean Rank	Over-all Rank
1	VNSNY Supervisors/Facilitators	166	19	2.89	1
2	VNSNY Peers	170	15	4.05	2
3	Physicians	172	13	4.12	3
4	VNSNY Staff	156	29	4.64	4
5	Neighborhood Pharmacy	165	20	5.01	5
6	Hospitals and Clinics	128	57	6.46	6
7	Patients' Neighbors	157	28	7.08	7

Table 2: Rank-Order (Top Items) of Most Useful Information Leads, by Survey Respondents

In terms of sources found in the patient's home, the nurses rely heavily on patient logs. These are particularly helpful when ascertaining the patient's condition on days when no visits are made. Other information leads available in the patient's home rank in this order: (2) prescriptions, (3) medication instructions, (4) discharge summary, (5) health insurance, (6) referral forms and the (7) VNSNY patient's folder. These resources provide the direct connection for the nurse in terms of determining the patient's current health status—having relevant information available when determining the degree and extent of the client's progression towards full recovery.

VNSNY supervisors and facilitators are among those considered the most frequently accessed sources in the community. They are followed by (2) fellow nurses, (3) physicians, (4) agency resource staff, (5) pharmacy, (6) hospitals and clinics, and the (7) patient's neighbors. This rank-order can be attributed to the nurses' need to obtain important information right away, essential in being able to carry out their daily professional responsibilities more efficiently.

The use of information leads by home care nurses are likewise examined in the case study group using the same categories: information sources personally owned and carried by nurses at all times, those found in the patients' homes, and in the community. An outstanding observation is evident in the information search logs submitted by the participants. Rarely did nurses resort to using only one particular information source. It is

almost always a combination of leads or sources. The predominant use of the computer-tablet and the telephone are examples of two-commonly preferred sources.

The computer-tablet holds all the records of patients assigned to a particular nurse and other relevant information. Nurses turn to the computer-tablet for information regarding any or all questions, issues and concerns such as medications, treatment, insurance, etc. It is considered a direct lead to bridge encountered information gaps. And while the telephone is frequently accessed as an information source, it serves as a tool or conduit to reach the main source—one that might provide answers to the nurses' information questions. This same observation is likewise evident in their recorded search logs, individual and focus group transcripts. The participants seek information from their computer-tablets, or use the phone to call for information assistance.

The case-study participants offer other information leads and conduits in the category of personal resources that they use, such as personal journals, teaching materials, Internet, drug book and street map. Use of the Internet is referred to in the search logs and interviews in various ways, such as Explorer, Google, Medline and e-mail. It is a general term used by the participants for information searching tools necessitating clarification from the participants on many occasions.

A few information leads in the category of those found in the patient's home are worth mentioning. Foremost among these are family members, referred to in the scenarios as the patient's spouse, emergency contact, significant other, or caregiver. The nurses value the presence of family members who able to fill in the gaps when questions arise that pertains to the care of the patient. On many occasions, the client is so weak and preoccupied that a family member oftentimes serves as the information source.

Another commonly used information source cited in the case study and found in the patient's home is the medication instruction sheet. Patients are given prescriptions, discharge and medication instructions when coming from either the hospital or the doctor's clinic. These forms contain direct information or hints as to the nature and severity of the patient's condition, treatment and prognosis—helpful in instances when the nurse has little or no information about the patient.

Also found in patients' homes are personal computers. One might think this to be a ready link to needed information for nurses. However, case-study participants verbalize not even thinking about the possibility of using patients' computers. They consider "patients' computers as personal property." And while the occasional need to use it might be warranted and with the owner's permission, they insist that it is never right and justified. The nurses add that "they would rather call someone or wait until they got back to the office to get the information."

Another home resource that is frequently used is the patient's cultural or lifestyle orientation. These refer to ways, preferences and values arising from one's social and cultural upbringing. Sandstrom (2004, 13) acknowledges that anthropologists regard culture as a "kind of information system." Culturally-related practices and beliefs can then be considered bits of information. The inclusion of the client's cultural and lifestyle orientation as a resource is pertinent in making sure that nursing and the strategies and approaches to deliver care be individualized, personalized and unique to the needs and requirements of a particular home care patient. For instance, this socio-cultural orientation is imperative when assessing, planning and intervening with the nutritional

problems of a client. Nurses elicit the client's particular food preferences and incorporate them into the treatment regimen. A case-study nurse describes asking her Guyanese patient for food preferences and adapting them into the patient's diet teachings. Including food choices that the patient likes and is familiar with increases the likelihood of compliance to the treatment plan.

Resources that are available in the community and used by nurses are many. Among these community leads, the search and interview transcripts describe nurses to be frequently accessing their patient service managers (PSMs) and team facilitators. They prefer to call the office and seek information help from their team leaders. Other commonly used community sources include clinical resource, management, and other staff of the agency. Examples include therapists, case managers, social workers, and home health aides. Scenarios cited when other staff are sought out for information help include an instance when the nurse calls the case manager for clarification and information about insurance authorizations, or when a professional consult is initiated with the therapist in terms of elements in the rehabilitative plan of treatment.

Physicians fall under the category of community information leads. However, the case study nurses lament that doctors are not as accessible and available. They are described "useful and effective only when they are available and willing to answer the nurses' phone calls." One participant sums up physicians as "always being pressed for time … and easily becoming annoyed when nurses call."

To review, home care nurses use a variety of resources personally available or those in the patient's home and the community. For personal resources, the nurses' first choices are the computer-tablet and the telephone. In terms of those available in the client's home, observation logs and journals, prescriptions, medication and discharge instructions are rated most valuable. In addition, family members and the client's cultural or lifestyle orientation play significant roles as information leads and conduits. Community resources found to be most useful are home care agency supervisors and facilitators, resource and management staff, and physicians. Understandably, doctors are regarded highly as information leads despite the difficulties nurses encounter when contacting, communicating and coordinating with them.

5.4 Help-Seeking Information Behavior

The use of information sources by home care nurses parallel those by hospital and clinic nurses from previous research (Corcoran-Perry and Graves 1990; Bunyan and Lutz 1991; Lange 1992; Stephens et al 1992; Blythe and Royle 1993; Spath and Buttlar 1996; Cheng and Lam 1996; Bawden and Robinson 1997; Lathey 1999; Cogdill 2003). Nurses use different sources of information to carry out their daily professional responsibilities and some authors categorize these into two general groups—those that are in print (might be in paper, electronic or digital format) and those that are verbal or human (Corcoran-Perry and Graves 1990; Blythe and Royle 1993; Leckie, Pettigrew and Sylvain 1996; Cogdill 2003). The home care nurses in this study follow the same pattern, with information leads and conduits either in print or human sources.

The survey reveals that among the most commonly used written, electronic or digital sources include the computer-tablet, phone, drug reference, street map, agency handbook, policy manual, patient logs and journals, prescriptions, medications and discharge instructions. These findings were about similar in the case study. More significantly is the use of human sources of information by these nurses. To recall, the rank-order of

community resources from the survey include their supervisors/ team facilitators, peers, physicians, other agency staff, neighborhood pharmacists, hospital and clinic personnel and neighbors. Even family members come up as very important information leads. Note also that this use of human leads is supported with the phone ranking second among personal resources and serving as a conduit to reach out to another person and obtain needed information.

Why is there an inclination for human sources? Nurses in this study share some insights. They assert that calling a source "is so much easier" and one "gets the answer right away." They reason that their day is packed and their schedule tight, between seeing their caseload for the day and doing the many other administrative and coordinative functions expected of them. Nurses see at least 5 clients a day, admit new patients, attend team meetings, call and collaborate with physicians, specialists, management and other resource staff who might have pertinent roles in each of their patient's care management and treatment. Whenever an information driver comes to the surface, this stops them from completing their work because they have to obtain the essential information to be able to go on. Calling up a source is the more efficient mode.

Nurses and other health care professionals are charged with the care and management of human lives that there is no margin for mistakes or errors. An information question is considered serious and can affect outcomes. Case study participants share some situations when accuracy of the information is essential, such as not being familiar with the client's medical diagnosis (Creutzfeldt-Jakob Disease), why a patient's blood pressure persist to be below the expected range, the actual interaction between two new diabetic medications (Actos and Avandia), and other related situations described in the search logs. In these situations, the nurses admit that calling up a reliable information lead (such as the team facilitator, clinical resource, pharmacist or physician) is appropriate. They would "rather be sure to get the information from a trusted source" than commit an error.

In some instances, the participants in the study access a human information lead whenever the information driver calls for them to seek guidance and supervision from their managers or a subject authority as in a pharmacist, nutritionist, or rehabilitation therapist. A nurse discloses her experience of calling the occupational therapist to obtain guidance in terms of instituting the home exercise regimen prescribed to a particular client. Or the other nurse who is uncertain whether or not to take a patient into service and seeks out her supervisor for guidance.

In many of the information drivers identified in the case study, the home care nurses claim they really know the answers to their information needs. According to the nurses, calling up a human information lead is actually seeking validation or confirmation, and "just want to be sure" or "asking another practitioner for (another) opinion." This affirms Gorman's (1995) findings about health professionals' reasons for their preference of human information sources as help-seeking for validation and guidance, in quest of higher-order information, and the mutual understanding of, professional and collegial aim for quality and best practice.

In examining the scenarios and the information behavior motivators for home care nurses, all the circumstances point to help-seeking as the significant raison d'être for choosing human leads over print format. Whether seeking human sources for efficiency reasons (as in situations when nurses reason their lack of time from their heavy caseload and tight schedule), avoiding errors and maintaining their clients' safe and quality care,

requiring guidance or supervision from managers and experts, or obtaining some form of confirmation, validation or another perspective, these situations conform to the general category of help-seeking.

This element of help-seeking makes it a relevant and unique aspect of nursing information behavior. The frequent use by nurses of human information leads, as well as the explanations and underlying motivators for this inclination, draws attention to this angle of information behavior. Use of human sources is not the typical and traditional information-seeking that is characteristic of electronic and print formats. It entails different behavioral, cognitive, social and motor skills and requirements than the usual search engine, electronic database or catalogue-article chasing. Important elements of the help-seeking nature of information behavior might take into consideration the following: (1) a social network of readily available, reliable and expert sources that one can always access, (2) the role and relevance of a highly dependable communication tool (whether cell or telephone, electronic mail, discussion boards, etc.), (3) one's ability for quick thinking and critical analysis when seeking consult at such limited time and potentially least favorable circumstances, (4) multi-tasking capabilities, such as being able to continue with one's work of documenting, providing care, and conducting telephonic consultations, and (5) dynamic managing, processing, integrating and use of myriad information.

When considering the locus of practice of home care nurses where they are likely to be in the field by themselves on most occasions and without easy physical access to specialists, colleagues and supervisors, reliance on calls to these information leads can be quite pervasive, that this help-seeking aspect of information behavior merits further investigation and study.

6.0 Conclusions and Recommendations

The nursing information behavior (NIB) of home care nurses can be described in the context of their information needs and most commonly used information sources. Additionally, a pervasive observation is the nurses' tendency to seek out human leads for information help-seeking. The findings and observations generated from the research support these and are summarized here. The respondents rank the most frequently occurring information drivers in the following order: computer-related issues, treatment, medication, diagnosis, OASIS assessments, care planning, driving/location, billing, VNS administrative policy, community resources, VNS clinical practice, patient demographics, and regulations. Other less than usual information drivers are those relating to home supplies, medical consult, home care office questions, home health aide (HHA), physician contact, getting MD orders signed, OPN/OPS (ordering medical supplies, equipment and other therapists), nursing supervision, computer-tablet battery, use of cell phones, and referral information. More importantly, information drivers can either be simple, compound or complex. It may appear as one and uncomplicated, in combination, or made up of more than two information needs. It may also be initially clear, direct and easily understandable; or it maybe vague and intricate, requiring some information filtering and preliminary processing before it becomes obvious and comprehensible.

Nursing information drivers can either be direct patient-care concerns (such as diagnostic, treatment, medication, triage, or nutritional) or indirect, institution or regulatory-specific (as in admission, OASIS documentation, aide conversion, rehab-only admissions, billing, compliance and computer issues). This means that information drivers are also triggered

contextually, specifically with changes in policies and procedure, regulatory, socio-economic influences in the fields of health, nursing and home care.

Information drivers in home care nursing are usually motivated by the nurses' drive to deliver safe, efficient and quality care, as well as to be compliant to standards and regulations, and their personal need "to know." Nursing information drivers also denote precision and require immediacy, which usually occur in the locus of care where there are less available resources.

Another perspective explored in the study pertains to the nurses' most frequently accessed information leads and conduits. They rank the computer-tablet, the telephone and the drug reference book as the top three most frequently used personal resources. Others follow in this order: agency handbook, policy manual, tablet/Help function, phonebook, care plan manual, diagnostic manual, medical dictionary, beeper, calculator, orientation manual, other agencies resource listing, and dietary manual. Resources found in the patient's home are rated in this order: patient logs, prescriptions, medication instructions, discharge information, health insurance, referral forms, VNSNY patient folder, interdisciplinary communications, family member, special diet sheets, weighing scale, patient's telephone, and the short referral form. Community leads and conduits rank in this order: agency supervisors and facilitators, peers, physicians, VNSNY staff, community retail pharmacy, hospitals and clinics, neighbors, building staff, police, nearby stores, firemen, postal workers, area library, and schools.

Another observation relates to the nature of a particular resource sometimes pre-determining whether it serves as a lead or a conduit to the nurse. Some resources are meant to be information leads, and some to be information conduits. For instance, the nurses in the survey ranked the computer-tablet and the telephone as their two most useful personal resources. Between these two, the tablet is obviously an information lead on most occasions since it holds basic information they need about their patients. On the other hand, the telephone is clearly a conduit used to call someone who might serve as the lead in the information-seeking process. Additionally, some resources function in both ways. The computer-tablet might likewise be a conduit, such as a situation when the only accessible and valuable information it carries is the physician's phone number which the nurse can use to call for guidance and direction. The doctor, when eventually called by the nurse, serves as the information lead.

The nature and immediacy of the information driver is another determinant of what resources to access. For instance, the physician is the most appropriate information lead in a medication-related information driver. Examples of drivers pertaining to medications include questionable medication dosage, possible drug side effects observed in a patient, and the need for substituting brands. All these present potentially harmful risks to clients and obtaining the necessary information from the physician—who is the most appropriate and direct lead in these examples.

The home care nurses also prefer and rely heavily on human information leads and conduits, such as their managers, team facilitators, physicians, clinical resource staff and family members. Turning to human information leads accentuates the help-seeking perspective of nursing information behavior, particularly when faced with situations that threaten their efficient performance as nurses, jeopardize the safe and quality care they provide their clients, require supervision and direction, or necessitate validation and confirmation of their actions against best practices.

This investigation is an exploratory attempt to describe the nursing information behavior (NIB) of home care nurses. The above findings provide clearer and in-depth detail of NIB for our better understanding and appreciation, particularly in terms of information needs and sources, and its help-seeking nature. Future research should consider examining causal relationships between factors that affect their information drivers and their preferred information leads and conduits, as well as taking a closer analysis of help-seeking as a separate but essential component in information behavior.

7.0 References

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