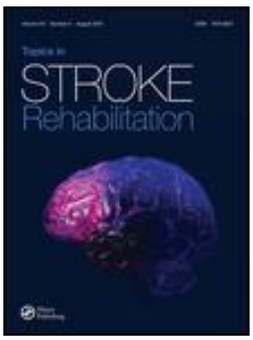

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Determining the Barriers and Facilitators to Adopting Best Practices in the Management of Poststroke Unilateral Spatial Neglect: Results of a Qualitative Study

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Background: A gap exists between best and actual management of poststroke unilateral spatial neglect (USN). Given the negative impact of USN on poststroke recovery, knowledge translation efforts are needed to optimize USN management. To date, no study has investigated the specific barriers and facilitators affecting USN management during the acute care process. **Objective:** To identify the facilitators and barriers that affect evidence-based practice use by occupational therapists (the primary discipline managing USN) when treating individuals with acute poststroke USN. **Methods:** Focus group methodology elicited information from 9 acute care occupational therapists. **Results:** Key barriers identified included lack of basic evidence-based practice skills specific to USN treatment and personal motivation to change current practices and engrained habits. Key facilitators included the presence of a multidisciplinary stroke team, recent graduation, and an environment with access to learning time and resources. Synthesized Web-based learning was also seen as important to uptake of best practices. **Conclusion:** It is estimated that upwards of 40% of patients experience poststroke USN in the acute phase, and we have evidence of poor early management. This study identified several modifiable factors that prepare the ground for the creation and testing of a multimodal knowledge translation intervention aimed at improving clinicians' best practice management of poststroke USN. **Key words:** *evidence-based practice, focus groups, hemispatial neglect, occupational therapy, stroke*

Knowledge translation (KT) is a process used to bridge the gap between evidence and actual clinical practice. KT can be defined as "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products and strengthen the health care system."[1] Within the context of medicine, and more specifically rehabilitation, the interest in KT has grown substantially in the past decade, and several studies examining its effectiveness have been undertaken.[2-10]

Although KT in rehabilitation is still in its infancy, a recent systematic review published in the *Journal of Rehabilitation Medicine*[11] suggests that various multimodal educational strategies hold promise in closing the gap between what we know to be effective and what we do in daily practice. These include use of opinion leaders (experts in the field whom clinicians trust),[2] interactive evidence-based practice (EBP) education-based courses,[3,4] training on evidence-based treatments and use of functional outcome measures, role playing,[5] and follow-up.[2,5] According to this systematic review,[11] these multimodal educational strategies are more effective

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than a single passive educational method such as dissemination of guidelines or holding an in-service.

Although KT strategies have potential benefits, they differ in effectiveness based on barriers and facilitators that clinicians face.[12,13] For example, the KT literature suggests that personal and institutional factors can act as either barriers or facilitators to successful implementation and sustained use of EBP.[12,13] The known personal factors include previous EBP education, years of experience, knowledge of how to effectively search and appraise the literature, and general attitudes toward EBP.[12] Clinicians with a low sense of self-efficacy in carrying out EBP activities are "less likely to perform these activities than people who perceive their level of skill to be higher."[12(p1295)] Institutional factors include work environment support, available resources, and time available to search the literature.[12]

Research has shown that a large gap exists between best practices and actual practices used by occupational therapists in managing poststroke unilateral spatial neglect (USN),[14,15] a sequela of stroke that seriously affects patient outcomes. Given that the global annual incidence of stroke is 15 million[16] and that up to 40% of patients experience USN,[17] the use of best practices to optimize functional outcomes[18] in patients with USN is crucial. As we undertook to create a KT intervention specific to USN management in the acute phase post stroke, we could find no information on the key barriers and facilitators to best practice use: The only evidence we had was of a serious lack of use of best practices.[14,15] For example, 2 Canadian studies have shown that standardized USN assessments are only used by 13% to 27% of occupational therapists, and only 58% offer any type of USN treatment.[14,15] According to Graham et al,[13] interventions geared toward increasing the use of EBP are optimized when the facilitators and barriers specific to the patient population, clinician, and work environment are identified. KT interventions can then be tailored and refined to specific needs.[13] Having already conducted 2 quantitative studies—a national survey and a chart audit[14,15]—that clearly identify the gaps in USN management in Canada, we now needed to better understand, using a focus group approach, the qualitative aspects that explain choices made in clinical practice and the barriers and facilitators to best practice implementation. Thus, the objective of this study was to identify the facilitators and barriers that affect EBP use by occupational therapists treating individuals with potential acute poststroke USN.

Methods

Research design

Qualitative descriptive research in the form of focus group methodology[19] was used to explore occupational therapists' perceptions of barriers and facilitators affecting their knowledge and use of EBP in poststroke USN management. In addition, clinicians were asked to specify which KT strategies they thought should be included in a KT intervention specific to poststroke USN management by occupational therapists working in acute care management of USN. Focus group methodology was chosen, because the use of focus groups typically leads to insights beyond those attained through individual interviews.[20] Ethics approval was obtained from McGill University's Faculty of Medicine Institutional Review Board, Montreal, Quebec, Canada.

Participants

Participants were recruited from tertiary care hospitals in and around Montreal. Occupational therapists were eligible if they were registered as an occupational therapist with the provincial licensing body in the province, had at least 3 months of experience working with a stroke clientele in an acute care hospital, treated a minimum of 2 adults with stroke per month, spoke either English or French, and provided consent. Purposive sampling was used to ensure a broad representation of clinicians, including both recent and senior graduates, those working in teaching and nonteaching institutions, and those working in the English and French sectors.

Focus group methods

Two focus groups, each involving up to 6 clinicians and lasting 2 hours, were planned based on an estimate of when saturation of ideas would

occur. One was conducted in English and the other in French. Written informed consent was obtained from each clinician before the commencement of each focus group. Structured focus group methodology was used.[20] An experienced moderator led the groups along with 2 assistants; all were occupational therapists with clinical and research experience in the field of USN. Each clinician completed a brief questionnaire eliciting sociodemographic information (see **Table 1**). Clinicians received a short introduction on the research findings suggesting the gap between EBP and actual practices in poststroke USN management. Then, the moderator posed each prepared question (see **Appendix** for an abridged version). First, questions about barriers and facilitators were posed. Next, clinicians were asked to reflect on KT strategies they thought were useful and should be included in a KT intervention specific to USN management.[21] As the clinicians discussed their ideas, one assistant audio-recorded and took field notes, while the second recorded comments on a flip chart that was viewable to all participants. To ensure that the essence of each discussion point had been fully captured, the clinicians' recorded comments were read back to them after each question, at which point they could clarify or add comments. Clinicians were not given monetary compensation but were provided with a catered dinner.

Focus group questions

The questions on institutional and personal barriers were generated with guidance from the PERFECT[22] as well as from previous focus groups on a similar topic.[23,24] The PERFECT is a standardized tool that explores change in practice behavior and reasons for change, as well as facilitators and barriers to change in practice. Examples of questions include the following: "Think of your clinical practice over the past six months, and please describe any changes you have made with respect to your assessment practices?", "What were the reason(s) for this change in assessment practice?", "What, if anything, helped bring about this change in assessment practice?"[22]

Although the PERFECT had undergone extensive pilot testing,[22] the additional focus group questions were pilot tested on 2 clinicians working in acute stroke care to ensure their clarity. No additional changes were suggested by these clinicians who were recruited from 2 McGill University–affiliated hospitals and did not participate in either focus group.

Table 1. Clinicians' personal and work characteristics collected categorically (n = 9)

Characteristic	*n*
Gender, female	8
Age, years	
19-25	4
26-35	5
Bachelor's degree	9
Years of experience	
<1	2
1–5	5
6–10	1
11–15	1
No. of patients with stroke seen/month	6–10
No. of patients with USN seen/month	1–3
No. of clinicians using a standardized USN protocol	0

Sample size considerations

The goal was to identify all perceived barriers and facilitators to EBP use specific to poststroke USN, as well as useful KT strategies that would be applicable and possible to implement. Thus, the goal was to continue to conduct focus groups until saturation occurred, that is, until it appeared that no new ideas were being generated.

Analysis

Descriptive statistics were used to characterize the clinicians according to their personal and work characteristics. Member checking was carried out during the actual focus groups by asking participants to review and validate all comments written on the white board for each question before moving onto the next question. Next, audio recordings from the English focus groups were transcribed and those from the French focus group were translated into English by a bilingual analyst and verified by a research team member. Directed content-based analysis techniques[25] were used to identify emerging themes related to each question posed during the focus groups. Specifically, triangulation was used as 3 members of the research team grouped

comments according to themes identified from the literature. Contents of each group were compared, and where there were differences, a consensus was reached. Next, relevant quotes and statements that suggested themes were categorized according to topic areas. Salient comments were abstracted to illustrate the themes that emerged and are presented below.

Results

Two focus groups were held with 9 occupational therapists participating: 6 in the group held in English and 3 in the group held in French. We postulated that saturation occurred in the second focus group, because no new ideas were generated that differed from those of the first group; thus, no further groups were scheduled, even though the original goal was to have a sample of up to 12 clinicians. **Table 1** presents the clinicians' personal and work characteristics collected in a categorical fashion. None reported using a standardized protocol for the assessment and treatment of USN. Most reported using common screening tools such as the Bells Test[26] or Star Cancellation Test,[27] but they were not necessarily specific to the type of USN with which the patient presented. In addition, most did not offer treatment because of lack of time to initiate treatment, given the typically short acute care stay, and/or because of knowledge that the patient would receive treatment during in-patient or outpatient rehabilitation.

Thematic analysis of clinicians' comments on facilitators and barriers to EBP knowledge and use revealed 4 natural groupings: institutional barriers, personal barriers, institutional facilitators, and personal facilitators. The key themes voiced by the group were abstracted and described below, as are salient comments ascribed to various themes.

Institutional barriers and facilitators

Five main themes around institutional barriers emerged: organizational, resource, coworker, managerial, and patient factors. A prevalent organizational factor mentioned by most clinicians was the structure of the hospital unit; specifically, working in a medical unit posed greater challenges than working in a stroke unit.

> *It's very different working on a stroke unit compared to a regular medical floor. On stroke units, all you see is stroke so the care is very specialized and coordinated amongst team members. There are often specific protocols to follow which you don't have on a medical floor.*

Another theme emerged around use of resources, specifically tasks that took away patient treatment time.

> *It's bad because we spend so much time charting or in meetings and that is time taken away from being with patients. If we had less charting, we would actually have time to offer treatments for USN and not just assess it.*

A third theme was coworker factors, for example, the difficulty posed by a lack of knowledge of USN and a lack of understanding of the occupational therapist's goals.

> *Nurses and PABs [auxiliaries] don't know about USN so if we rearrange a patient's room for example in order to compensate or as a treatment for USN, it is completely undone by the next day. It's very frustrating to have to explain to workers on every changing shift that the patient has USN and that we're trying to treat it.*

The fourth theme dealt with managerial factors. All clinicians felt great pressure to perform.

> *We have to see as many patients as we can each day even if that means lowering the quality of services we provide.*

The final theme emerged around patient factors, specifically how it is sometimes difficult to attempt best practices with certain patients.

> *It's hard to work with a patient who is completely unmotivated or even refuses assessment. It's even worse if there is a language barrier involved.*

Five main themes emerged in terms of institutional facilitators including organizational, continued learning, managerial, resource availability, and patient factors. When asked about organizational facilitators, several clinicians mentioned being part of a university-affiliated hospital.

> *Being part of a university affiliated hospital is good as it forces us to keep up with the research and use it in practice; it's our mandate. Also having student placements helps because they teach us new things that have evolved since we were in school.*

The following were the specific facilitators related to continued learning described by all clinicians: the presence of a stroke team or strong multidisciplinary team; having dedicated educational days set aside each year; and having access to learning materials such as computers,

journals, and stroke rehabilitation–specific synthesized online information such as www.strokengine.ca[28] and http://ebrsr.com.[29]

We don't have time to sit in front of a computer and read article after article. That's why online sites like StrokEngine and EBRSR are great because we can get the updated information we need quickly.

Having educational days where we can go to a seminar or conference is great because you learn so much about a topic that is interesting and relates to your clientele.

The third theme dealt with managerial factors, specifically that learning or use of EBP is maximized when enforced by management.

We're definitely much more likely to read articles or incorporate EBP into our practice if it's a mandate from the manager.

The fourth theme emerged around patient factors and how a supportive family is a great asset to both the patient and occupational therapist.

It's great when the family is present and supportive. You can involve them in the treatment process since we don't always have the time to give as much treatment as is necessary.

The final theme mentioned by a few clinicians encompassed resource factors, for example, how external help such as an occupational therapy assistant is necessary.

In acute care we don't have the time to provide every patient with the frequency of treatments they need. An occupational therapy assistant would be great because then they could carry out the treatments that we plan for the patient.

Personal barriers and facilitators

When asked about personal barriers, 3 main themes emerged: attitudes, education factors, and personal life factors. In relation to attitudes, the majority of clinicians mentioned that a lack of willingness to change practices and a lack of interest in research and adopting best practices can act as personal barriers.

I am all for using best practices and updating my practice as the years go by, but some of my colleagues are set in their ways and don't want to change the assessment tools or treatments they give patients.

Some clinicians just don't like reading about research and they don't think it's their job. So they don't use new research in their everyday practice.

The second theme emerged around education factors. Each clinician said he or she lacked basic EBP skills.

I only learned a little bit of EBP in school, just the basics but since I haven't used it I've forgotten. I don't know how to appraise an article and I don't usually understand more difficult statistics either.

The third theme dealt with personal life factors and how one's age or home situation can act as a personal barrier as perceived by others.

If you aren't married with kids, you are more likely to be able to go to conferences away from home or read up on articles at night.

I can see that the older therapists who are closer to retirement don't care to put in as much effort to stay up to date with research because they're retiring soon.

Three key themes emerged around personal facilitators, including personal habits, personal beliefs, and educational factors. The first theme dealt with personal habits and how organization can lead to increased knowledge of EBP.

Working in acute care you need to have good time management skills in order to balance a large caseload yet still have time left over to stay up to date with research.

The second theme mentioned by a few clinicians was personal beliefs related to best practice and the importance thereof.

If you believe in best practices and their positive impact on the patients, you're more likely to use them.

Education was the last personal theme mentioned by all clinicians. Facilitators to knowledge and use of EBP included a higher level of education such as a master's degree, being a more recent graduate who received EBP training in school, and having an inquisitive practice style in which new information is constantly sought.

Interventions to increase clinician knowledge

When clinicians received the request, "Please share your opinion on what an ideal intervention geared towards increasing a clinician's knowledge of, and use of, standardized assessments and effective interventions would look like," the clinicians discussed numerous strategies that can be grouped into the following themes.

- Practicing assessments and interventions on other clinicians, which will help to integrate new knowledge
- Accessing online modules that provide a quick and easy reference to synthesized evidence,

such as quizzes, case studies, videos, pictures, and practical examples
- Pre- and post-testing of knowledge regarding best practices so that the clinician can quantify learning that took place
- Follow-up period after a conference/learning session to share experiences and receive feedback (eg, online forum)
- Obtaining a certificate of recognition at completion of a course/seminar
- Pocket cards summarizing essential clinical management information, which can be kept readily available
- Learning that is "enforced by management"

Discussion

To our knowledge, this study is the first to highlight the barriers and facilitators to using EBP that is specific to the treatment of acute poststroke USN. The key barriers—including a lack of staffing, time constraints, budget restraints—have also been described in other studies.[12,30] Similarly, key facilitators described in this study, such as higher education and being a more recent graduate, have been mentioned in other EBP studies.[12,31,32] A major institutional barrier was working in a medical unit versus a stroke unit. Stroke units comprise an expert interdisciplinary team of health professionals working cohesively and closely to provide a comprehensive program for each patient.[28] In general, it has been shown that clinicians working in a stroke unit are more likely to follow best practice guidelines, and patients treated in a stroke unit have better outcomes, including reduced mortality rates.[33] Unfortunately, most hospitals in which our participants worked did not have a stroke unit. Indeed, implementing a stroke unit is often a challenging process.[34] The results indicating that none of the therapists used a standardized USN protocol are consistent with findings of previous Canada-wide studies,[14,15] in which few therapists reported use of standardized assessment tools for patients with poststroke USN.

On the other hand, clinicians mentioned that easy access to synthesized stroke research facilitates their learning and use of EBP in daily practice. This represents a facilitator that can be enhanced, according to Graham et al[13] through the dissemination of knowledge tools. Clinicians also mentioned that hosting student placements was a facilitator because it helped to increase their knowledge. This association between clinicians having increased knowledge and hosting students has also been found in several other studies assessing clinicians' practices in stroke treatment across the continuum of care.[14,35-37]

The main personal barrier agreed upon by all clinicians was a lack of basic EBP skills, including the ability to search for articles, critically appraise them, and understand the different levels of evidence of effectiveness specific to an intervention. These barriers were also identified in several other studies.[12,31,32] For example, in a survey of 270 physical therapists treating people with stroke, more than 30% mentioned lack of research skills and lack of understanding statistical analysis as a major barrier.[12] This barrier, however, can potentially be modified if clinicians receive further EBP education either during their training or through continuing education courses. A standardized tool, the Evidence-based Practice Confidence Scale (EPIC),[38] was recently developed and validated by Salbach and colleagues to measure a clinician's sense of self-efficacy in executing EBP activities.

The study participants provided concrete suggestions that would be fairly easy to implement in an acute care setting. For example, to address the barrier expressed specific to the lack of knowledge regarding USN by the various team members, a notification board above the patient's bed, identifying the person as having USN and outlining relevant knowledge for the staff and family, is a low-cost solution. In addition, study participants stressed the need for quick and easily accessible online information about USN. We have developed learning materials based on clinicians' feedback, available at www.strokegine.ca (USN module), which include an interactive learning module, descriptions of the various assessment measures and their psychometric properties, and a structured review of the evidence of intervention effectiveness.[28] We have also posted a video and assessment results for an actual patient with USN, along with a printable USN pocket card that clinicians can use on the wards as a quick reference.

Although this study has shown that there are specific facilitators that optimize USN assessment

and intervention, one can postulate that a completely different set of facilitators and barriers exists depending on the health care system and setting. This study was conducted in an urban setting with all participants working within a universal socialized health care system. It is likely that those working in privatized health care, in a rural setting, in a different country, or in a stroke unit would be facing some similar as well as some different barriers to best practice patient management for USN. Indeed, as pointed out by Graham et al,[13] highly successful clinical practice change is contingent upon adapting an intervention to the specific needs of a particular local context. The findings of Graham et al[13] also support the notion that there is a different set of facilitators to explain successful uptake of other stroke-specific interventions, for example, constraint-induced therapy for upper limb management post stroke.

As we become more sophisticated in closing the gap between research evidence and daily clinical practice, we will increasingly realize the futility of providing general best practice guidelines based on "it works, use it" without carefully identifying the variables that maximize successful uptake. Indeed, a recent review article by the Kessler Institute published in *Nature Reviews: Neurology*[39] provides a pertinent example specific to USN management. The authors highlight the challenges that exist in translating the effectiveness literature on prism intervention into clinical use. They point out that while prism therapy has been proven effective in numerous studies,[40-43] clinicians do not have the necessary information with which to implement the treatment in their daily practice. The type of patient who would respond best to prism treatment, the types of prisms that work best, and the optimal dose must all be made clearer if clinicians are to have confidence in introducing prism therapy.[39]

Future directions

The subsequent step to this study, in accordance with the knowledge to action process model,[13] would be to select, tailor, and implement a KT intervention specific to the uptake of best practices for USN management. Toward this goal, our research team[21] has developed and pilot tested a multimodal KT intervention designed for clinicians based on what we have learned from this study and our previous work regarding effective KT strategies in rehabilitation.[11]

Limitations

The study sample may have underrepresented certain clinician categories (eg, those with increased years of experience, those working in a nonteaching hospital, those using a standardized USN protocol), leading to missed barriers and facilitators. Also, the sample may have underrepresented the normal range of possible clinician experiences. For example, no comments arose specific to the reliability/validity of USN assessment tools or treatments. It would be interesting to conduct a future study examining clinicians who are judged as "experts" in their field and to determine what their USN assessment and treatment practices look like as well as what barriers and facilitators they are facing. In addition, this study was conducted in only one type of health care system and region. Future studies will need to address the issues that are specific to various regions and countries with varying health care systems, as indicated by the "adapt knowledge to local context" section of the knowledge to action process model.[13]

Conclusion

This study identified several modifiable factors that should help acute care clinical sites to optimize their USN best practice management. Although some factors may be particularly challenging to modify, such as implementation of a stroke unit, several are easily altered.

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APPENDIX

Abridged Focus Group Questions

1. Since you all work in an acute care stroke setting, I would like for each of you to tell us about your practice related to post-stroke USN. For example, you may want to describe how many patients you see with stroke in any given month, approximately how many of them have USN, and whether there is a protocol used in your setting in terms of assessment and treatment, etc.
2. Now we are going to talk about the factors in your institution that you feel help facilitate your daily practice. What organizational, managerial, or resource factors help you practice in the way you wish to practice?
3. Now we are going to discuss a different type of facilitator – personal facilitators. When you look at your colleagues, what personal factors, that is, their personalities, beliefs, education, or experiences, do you think help them to optimize their use of standardized, timely assessment and effective interventions?
4. We will now shift gears and talk about the barriers that hinder our practice, making it different from our desired practice. What aspects of your institution, its policies and procedures, the management, or other health care workers, act as barriers to you or your colleagues when managing post-stroke USN?
5. Now we are going to discuss a different type of barrier – personal barriers. When you look at your colleagues, what personal characteristics, that is, personalities, beliefs, education or experiences, etc, hinder their practice?
6. Now I would like you to switch your thinking and remember some different educational strategies (eg, conferences, in services, Web-based searches, library support, etc.) that you have found useful. What kind of learning have you been exposed to and what helped you learn and what did not?
7. You have all mentioned many barriers and facilitators to your practice related to post-stroke USN. Keeping these and the educational strategies we have just discussed in mind, please share your opinion on what an ideal intervention geared toward increasing a clinician's knowledge of and use of standardized assessments and effective interventions would look like. What components are needed in order to ensure good learning as well as what could help to decrease the barriers and increase the facilitators?