

Intersection of the Elements of Evidence-Based Practice in Interdisciplinary Stroke Rehabilitation: A Qualitative Study

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ABSTRACT

Evidence-based practice (EBP) is a foundational approach to clinical decision-making that integrates scientific research; clinical expertise; and patient preferences, values and circumstances. The purpose of this study was to explore the intersection of the three elements of EBP among an interdisciplinary stroke rehabilitation team. An exploratory qualitative descriptive design was used to examine the intersection of elements through a focus group with the allied health members of an interdisciplinary stroke rehabilitation team. Thematic analysis was applied to the data. Three main themes were developed: the patient as the driver, EBP as a fluid process, and EBP as a collaborative team process. While all three elements intersected during care planning, patient preferences, values, and circumstances were the dominant influence in decision-making. EBP was a dynamic process changing over time and context. Collaboration with the patient and between health professionals was an integral part of the approach. Results demonstrated that EBP is a complex and iterative process. Clinicians require skills in integrating each of the three elements for successful application of EBP in stroke rehabilitation.

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INTRODUCTION

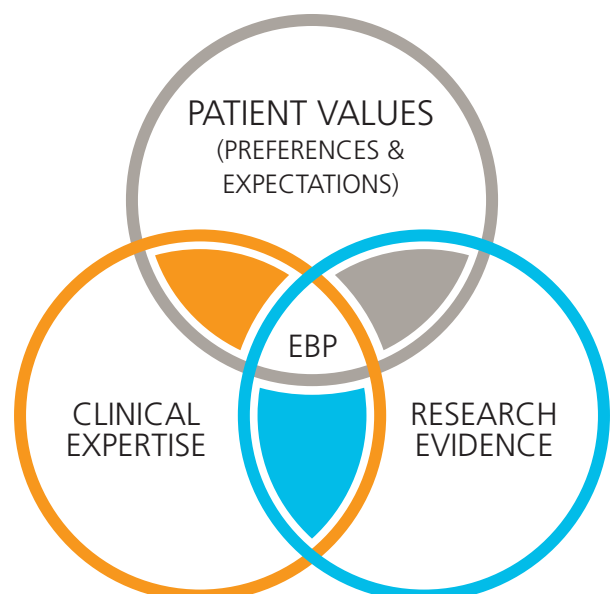
Evidence-based practice (EBP) is an approach to healthcare decision-making that involves the integration of scientific evidence; clinical expertise; and patient values, preferences and circumstances (Straus et al., 2019). It is a well-established process that “promotes the development of service effectiveness, efficiency and quality, competent professionals and discipline credibility” (Whiteside et al., 2016, p. 417)

Conceptually, EBP is typically depicted as a Venn diagram (Figure 1), with three elements considered essential to evidence-based decision-making. Reviewing and appraising relevant research evidence allows healthcare professionals to remain current and expand their clinical knowledge (Hoffmann et al., 2014). Research applied in isolation cannot guide practice, as evidence may be limited or not applicable in clinical contexts that differ substantially from the research conditions (Siminoff, 2013). Clinical expertise involves the application of critical thinking and professional experience; it is tacit knowledge that clinicians develop to determine which treatments are appropriate for particular patients and circumstances (Dawes et al., 2005). The integration of patient values and preferences is necessary to guide how evidence is applied for individuals (Siminoff, 2013). Although there is a growing body of research on EBP use among allied health professionals, existing literature has primarily focused on how they obtain, evaluate, and utilise scientific

evidence (Abu Bakar et al., 2018). It is less clear how the three components of EBP interact to influence clinical decision-making.

Figure 1

Conceptual Representation of EBP Based on Written Information in Sackett et al. (2000).



Existing literature suggests that despite clinicians' understanding of the importance and application of EBP, the translation of EBP principles into clinical practice remains inconsistent (P. Upton et al., 2012). Additionally, while many healthcare professionals demonstrate positive attitudes, knowledge, and beliefs towards EBP, these do not necessarily result in EBP uptake (D. Upton et al., 2014; Wilkinson et al., 2012). The majority of EBP research has been conducted with single professions, with limited exploration in interprofessional teams.

The objective of this study was to explore the intersection between the three elements of EBP in care planning among an interdisciplinary stroke rehabilitation team.

METHODS

Study design

This exploratory qualitative descriptive study (Neergaard et al., 2009) examined the intersection of EBP elements during care planning in an interdisciplinary stroke rehabilitation team of allied health professionals in a Canadian hospital. Ethical approval was obtained from the Institutional Research Ethics Board (R19-020).

Qualitative description enabled the reporting of findings with interpretation that did not intend to provide a conceptual or theoretical output (Neergaard et al., 2009). The consolidated criteria for reporting qualitative research (COREQ) checklist (Tong et al., 2007) guided the study's reporting.

Participants and recruitment

All allied health members of the interdisciplinary team on the integrated stroke and rehabilitation unit were eligible to participate, including occupational therapists, physiotherapists, social workers, and speech-language pathologists. The unit provides acute care and inpatient rehabilitation post-stroke until discharge from hospital (average length of rehabilitation is 23 days). Potential participants were approached in-person by the principal investigator (CV), who worked as a physiotherapist at the same institution but within a different department. She was known to the study's participants and was familiar with the processes of the unit, having worked there for 9 years, until 3 years ago.

Data collection

The principal investigator undertook recruitment, data collection, and analysis. This research was conducted in recognition of the potential challenges of EBP application in an inpatient rehabilitation context. Demographic data (age, professional discipline, number of years in practice, highest level of education, and previous participation in research) were collected at the time the participants were recruited. The principal investigator observed one "rehabilitation rounds" where the allied health team, along with the patient's primary nurse, met with each patient in their room to discuss care plans and set goals. Field notes captured examples of how and what the team discussed during treatment planning for use as prompts in the focus group, but these notes were not used in the analysis.

Immediately after the rehabilitation rounds, the focus group commenced, facilitated by the principal investigator. The development of focus group questions and prompts occurred

through multiple, iterative discussions within the research team, which included two senior researchers with extensive experience in qualitative research and focus group techniques. Participants were reminded of the definition of EBP (Straus et al., 2019) to establish context. Four main questions were posed:

1. How do you value each of the three elements of EBP?
2. How does the team utilise EBP for decision-making?
3. Is there one element of EBP that is most influential during care planning?
4. What contributes to an unequal weighting of EBP elements?

Focus group techniques were used to encourage discussion between participants to enhance the development of ideas and explore alternate or complementary perspectives (Liamputtong, 2011). The focus group was 45 min long, audio recorded, and transcribed verbatim.

Data analysis

The inductive content analysis (Neergaard et al., 2009) began with data familiarisation (repeatedly listening to the audio recording, transcription, reading and re-reading the transcript) followed by coding. Units of text that captured the phenomena of interest were coded systematically at a descriptive level.

A second investigator (JHS) independently coded the data, and discussion occurred between all authors to refine codes. Preliminary codes were grouped into themes and subthemes based on similarities in the content. Iterative discussion between the principal investigator and second investigator led to agreed themes that reflected the intersection of elements of EBP in the care planning process. To improve credibility and confirmability, participants were presented with a summary of the study findings, both verbally and in writing, and invited to provide comment on the interpretation of the data.

RESULTS

All of the clinicians who were approached to take part in the study ($n = 7$) consented, although two were unable to attend the focus group. Five clinicians participated (two occupational therapists, two physiotherapists, and one social worker); all were female, with ages ranging from 34-54 years, and with 11-27 years of professional practice. One had a profession-specific undergraduate degree and four had professional Master's degrees. All clinicians worked full-time, and none had previously participated in post-registration research. Demographic data were presented in aggregate due to the small sample size and risk of compromising anonymity.

Three main themes represented the intersection between EBP elements in care planning within a stroke rehabilitation team: "the patient as the driver", "EBP as a fluid process", and "EBP as a collaborative team process". The intersection of patient values, clinical expertise, and research evidence appeared throughout the discussion. Clinicians drew from each of these elements during care planning, while the context (patient and organisational influences) determined the ways and degree to which they intersected. Patient preferences were at the forefront of discussion, and clinicians continually came back to the patient as the primary influence on care planning and team-patient negotiation.

The patient as the driver

This theme is composed of three subthemes: “the primacy of patient-centredness”, “patient-directed goals” and “being patient-specific”. The patient was considered the primary driver of EBP during care planning. There was consensus that the team valued a patient-centred approach and that processes focused on the patient as a unique individual.

The primacy of patient-centredness

While the contribution from each EBP element was acknowledged, the patient was the dominant influence in decision-making:

For me, the patient part [of EBP] is the driver. I don't necessarily think that it's more important, because I think what the research says and what my past experience says have a lot to say to that. But where they're [the patient] at is really the driver of how those other things are brought in ... It doesn't matter how good the research is or how much I think something's going to help, if the patient doesn't want to do it, or won't do it, then it's [not going to work]. (OT 1)

Clinicians expressed that patient values, preferences, priorities, goals, and circumstances guided care planning and service delivery. They used language and examples that highlighted their desire and effort to engage in a patient-centred approach. Patient-centredness was also perceived to improve patient outcomes and engagement in rehabilitation.

Patient-directed goals

Goal setting was the most common example of care planning. Clinicians felt that patient-directed goals were more meaningful to patients, which also helped to improve patient engagement and outcomes: “It's really about what the patient identifies as their concerns and their goals, and how to address them” (SW).

Active patient participation in goal setting and care planning was regarded as a key component of rehabilitation. Clinicians felt that the goal-setting process held therapeutic value for patients, especially those with communication deficits, and helped the clinicians better understand the patients' perspective.

Being patient-specific

The care planning process was specific to the patient and their context. Decision-making was influenced by intrinsic and extrinsic patient-related factors. Intrinsic factors included patients' attitudes and beliefs, preferences, cognition, communication, and health literacy. Extrinsic factors, such as the patients' social support system, home environment, and financial circumstances, were also considered. Treatment plans were guided by patient impairments and goals, and the clinicians' desire to promote patient success: “Knowing that's a challenge for her, what things can we have her be successful with so that she has even a small repertoire of things that she *can* [emphasis added] do?” (OT1).

Communication strategies were tailored, and content was individualised. For instance, sometimes a clinician explicitly discussed research underpinning their recommendations with a patient if they perceived it would improve patient engagement.

EBP as a fluid process

The elements of EBP were valued and prioritised in different

ways, by different clinicians, under different circumstances. While patient preferences were often dominant in directing decision-making, the iterative interaction of all three elements was evident:

I think that [putting the patient first] almost ties back and loops around to the fact that evidence would support that patient values have to be the priority. Especially in stroke, meaningful activity and functional activity and all of those things are [important], and also my personal experience to back that up. So, I think although you put the patient first, the other things [research evidence, clinical expertise] would say that [as well]. So, they all tie together. (OT1)

This clinician drew on research evidence about the importance of patient-centredness backed up by her clinical experience to explain why patient values were the most explicit and dominant element of EBP in everyday practice.

Factors such as time, staffing, training, access to evidence, and organisational priorities influenced the clinical application of EBP. One clinician described constraints on seeking and using scientific research, which changed the relative influence of the other two EBP elements on care planning:

The priorities of the [hospital] or wherever it is that you're working [matter], because what I find is that if I don't have time to ensure that I'm always doing what the newest, best or latest research [recommends], I can get into a rut. Then it's my clinical experience taking over rather than the patient's concerns. (PT2)

Clinicians also acknowledged that physical resources, like space and materials, influenced their ability to incorporate patient preferences (e.g., meal preparation) into clinical practice:

Just the availability of materials to make something meaningful. You have to have the right materials to do cooking; you either have to have a kitchen or spend a lot of time thinking about how you're going to do that in a different setting. (OT1)

While attention to patient priorities during care planning was evident, the contribution of other EBP elements may not be as obvious in clinical practice. Clinicians acknowledged that they did not necessarily verbalise the application of research evidence during care planning, although this was embedded in their clinical recommendations:

When I'm thinking back to some goals we tend to set, a lot of the time they're coming from the research. So, you're thinking that way and that's why you're saying, ‘Why don't we have a goal around you stabilising on your active arm?’ (PT2)

There were times when research evidence was explained to the patient or other team members as a means to justify particular goals or treatment strategies:

I don't think we overtly [discuss evidence], except for [evidence-based] sit-to-stand goals. The nurses or the patients will be like, ‘Why do I have to do 13 sit-to-stands?’ ... So I will explain that [research evidence] because that's not obvious all the time. (PT2)

The EBP process evolved over time. For instance, a recent change in rehabilitation rounds, which now involved the team meeting with the patient present to discuss care plans and set goals, was intended to facilitate patient participation and elicit preferences, congruent with an EBP model of practice. Clinicians felt that it was also a way to improve interprofessional practice by increasing the engagement of other health professionals (nurses) to enhance patient-centred care:

Sometimes when it's just us [allied health], making up 'these are our goals' they [nurses] don't have any buy-in into it. And now, they're hopefully seeing more of, 'Okay, this is what the patient is asking to do and this is what the therapists are saying about how to get there'. (OT2)

Clinicians reflected positively on this practice evolution, iterating the value of this change for integrating patient preferences in evidence-based decision-making: "I should always be a lot more realistic with goal setting. It's good that this [the new rehabilitation rounds] is a way that we can learn more about the patients and make their goals more realistic and appropriate for them" (PT2). This participant suggested a shift in the balance of EBP elements for her, from a dominant contribution of clinical expertise to more weighting of patient values in the goal-setting process.

Clinical experience, another key element of EBP, had also evolved, especially for those with less experience: "As someone who hasn't worked in stroke for that long, I'm coming along with my experience, I have more of a reservoir to pull from, [to say] 'This person really reminds me of so-and-so'" (OT2). Novice clinicians also drew on and incorporated the experience of more expert clinicians in the team as a critical source of clinical expertise: "Being fairly new to this caseload, having folks with lots of experience is essential" (PT2).

EBP as a collaborative team process

The utilisation of EBP was influenced by team functioning. This team comprised the patient and allied health clinicians within a wider group of healthcare professionals providing care for a patient (e.g., nurses and doctors). Two subthemes reflected these team processes: "patient-clinician collaboration" and "professional collaboration".

Patient-clinician collaboration

Many examples of patient-clinician collaboration were described. Collaboration was typified by active patient involvement in goal setting and required the clinicians to have a clear understanding of the patient's circumstances, values, and preferences. In turn, clinicians provided education to patients and their families by drawing on clinical expertise and relevant research. Collaboration was believed to improve therapeutic alliance and enhance patient engagement in rehabilitation. However, some challenges to collaboration were highlighted as clinicians were clear that patients and therapists may see things differently. When clinicians were aware of a difference of opinion, they appeared to give primacy to the patient's view, consistent with the "patient as driver" theme:

Sometimes it's [care planning] a collaboration between what the patient is wanting to work on and goals that the team identify I would have loved to have my own goals to

see where that patient would be, but it doesn't matter. It is where that patient is at and how to support that patient at that moment in time. (SW)

Clinicians described reframing a patient's large or long-term goal into smaller or short-term components, believing patients and families did not have the necessary skill or knowledge to see these steps toward the larger goal. Reframing goals drew heavily on the other two EBP elements – clinical experience and research:

This happened in our 'rehab rounds'. The patient saying, 'My big goals are to walk'. They don't know what steps to take or what interventions are going to get them there; they just see that end goal. It's [providing education] related to our [experience]. This [short-term goal or treatment] is what's worked in the past based on how other patients have presented and the research. (OT2)

Professional collaboration

Collaboration among clinicians enhanced practice and enabled EBP. Clinicians described the benefit of a team for broadening the clinical expertise element of EBP: "When you get stuck in that rut, sometimes experience from another professional can say, 'How about try this?' And it opens a whole other world for you to look at" (PT1).

Clinicians recognised that the expertise they contributed in the context of EBP was shaped by their professional perspective and that others might approach care planning from differing views, bringing distinct knowledge and skills to the team process: "Certainly that's my philosophy as a social worker, is always to be where the patient is at" (SW).

Clinicians felt that educating others about research, sharing one's clinical reasoning, and the presence of patients at rehabilitation rounds helped the extended team apply EBP: "They [nurses] might learn more about where these goals are coming from and why, what our thought process is, so their interaction may end up being more client-centred in the end" (OT2). It was perceived that professional collaboration was an essential part of offering team-based EBP, and a genuinely interprofessional approach enhanced the practice of individual team members and improved patient care:

I think that we are looking at the whole experience side of it, like our professional experience. We do, as a team, do a lot of talking and comparing of patients, 'This person reminds me of so-and-so', and what worked in the past with them. ... Then using the other professionals around us who may have [had] success with the intervention or with care planning. (OT2)

DISCUSSION

In this interdisciplinary team of allied health professionals in stroke rehabilitation, all three elements of EBP intersected during care planning. However, patient values, preferences, and circumstances served as the starting point and primary focus for the clinicians. Within this environment, EBP was a fluid process that changed over time and context, and relied upon collaboration with the patient and within the interdisciplinary team.

The intersection of EBP elements was evident throughout the discussion of treatment sessions, care planning, and goal setting, but the primacy of patient values and preferences was a core concept. There is extensive literature on EBP engagement among allied health clinicians, the majority of which examines the use of scientific research in clinical practice (Abu Bakar et al., 2016; D. Upton et al., 2014). The current study provides a contrasting view of EBP, one in which the patient is the primary focus of decision-making.

Clinicians drew attention to patient preferences and values in the ways they spoke about the choice of treatment strategies specific to each patient, as well as the promotion of patient participation in goal setting. This demonstrates the overlap between the EBP element of patient preferences and the concept of patient-centred care, which highlights the patient as an active participant in their own care (Siminoff, 2013). The foundation of patient-centred care is that treatment decisions should consider patients' values, preferences, and wishes (Street et al., 2012), which is consistent with the EBP process if applied in a way that truly integrates each element of the EBP triad. The way clinicians described their practice might reflect a contemporary emphasis on patient-centredness. The concept of EBP was proposed and debated in the 1990s (Sackett et al., 1996), with widespread adoption as a foundation for health professional training and practice, while patient-centred care narratives have risen to prominence in the 2000s (Slater, 2006). Patient-centred care and EBP, as described by these clinicians, were complimentary.

Barriers to integrating patient values and preferences in evidence-based practice were identified. Organisational priorities, such as facilitating discharge and lack of physical resources (e.g., space and materials), limited the clinicians' capacity to engage in care that was as patient-centred as they desired. Individual and organisation-related barriers and facilitators to EBP engagement have been previously explored. However, this literature has focused on barriers and facilitators of applying research evidence clinically (Scurlock-Evans et al., 2014; Whiteside et al., 2016). While clinicians in this study also identified barriers to accessing and utilising research evidence, they were more concerned with limitations to providing patient-centred care than adherence to research-informed treatment. Findings indicated that perceived barriers to implementing EBP could influence the relative contribution of each EBP element to care planning; one element of EBP may be more dominant because of barriers to accessing or applying another.

The intersection of EBP elements in care planning was most evident in the examples that participants gave about goal setting. Attention to the patient was paramount for clinicians, as evidenced by their beliefs that patient-directed goals were more meaningful than clinician-directed goals and improved patient engagement; and active patient participation in goal setting was essential to successful rehabilitation. These are consistent with clinician beliefs expressed in previous qualitative studies on goal setting in stroke rehabilitation (Leach et al., 2010; Parsons et al., 2018).

Despite universal recognition that the patient is at the forefront of the goal-setting process, clinicians in this study felt that patients typically selected long-term goals and that specific short-term goals were also necessary. This is consistent with a recent mixed-method systematic review of goal setting in stroke rehabilitation that suggested patients typically expressed hopes rather than goals, identifying broad, long-term functional aspirations, whereas clinicians generally identified short-term impairment-related goals (Sugavanam et al., 2013). Clinicians in the current study drew on their clinical expertise and research evidence to reframe a patient's goal into short-term steps towards the patient's long-term goals. The strategy of reframing patients' goals has been described as a means to communicate treatment rationale, to override patient goals (Parsons et al., 2018), or to prioritise goal qualities of being realistic or achievable within the timeframes of inpatient rehabilitation (Levack et al., 2011). Regardless of the motivation, reframing patient goals into shorter, more discrete goals requires the application of research evidence and clinician expertise regarding stroke impairment and recovery, and knowledge of the health service context applied to patients' overall hopes and goals (Prescott et al. 2015).

Team collaboration is essential for successful EBP engagement in clinical practice. Each team member brings a unique perspective and set of experiences to the process, shaped by their professional identity and culture (Hall, 2005). "EBP profiles", which include the attitudes, knowledge, and skill of an individual in relation to EBP, have been shown to differ between groups of allied health professionals (McEvoy et al., 2010; D. Upton & Upton, 2006), reflecting variance in professional training, organisational exposure, and professional culture (Wilkinson et al., 2012). Professional roles influenced clinicians' EBP engagement in this study, with differences in perspective and approach evident between professional disciplines. Despite these differences, the team found a way to collectively implement EBP through a shared team value (i.e., primacy of patient preferences, values, and goals), which is characteristic of good teamwork (Nancarrow et al., 2013). The benefits of this collective view were highly regarded. Clinicians welcomed the perspectives of other team members and felt that discussing research evidence, clinical reasoning, and patient preferences enhanced EBP engagement, improved their practice, and, ultimately, lead to better patient-centred care.

Limitations

The current study had some methodological limitations. A small sample of one interdisciplinary team at a single institution limits the transferability of the findings. This study did not explore the opinions of members of the broader team (e.g., doctors, nurses), and therefore, the data represents only the allied health members of the interdisciplinary team.

The principal investigator was a clinician at the same institution. This experience and training may have sensitised her to the study context. However, including two external researchers in the study enabled discussion of any assumptions made during the data analysis. Moreover, the longstanding relationship between the principal investigator and the study participants

potentially enhanced participants' candour during the discussion.

The present study was an exploratory look at the interaction of EBP elements in an inpatient stroke rehabilitation context. Future research in an alternate setting, such as outpatient or community-based stroke rehabilitation, may potentially see different intersectionality of these elements, where patient values and preferences may be more salient. A comparison of the EBP process with different subsets of this population, such as stroke severity, may yield different findings. Further research involving the observation of clinical practice may clarify how clinicians negotiate the intersection of EBP elements.

CONCLUSION

This study demonstrated the intersection between EBP elements in stroke rehabilitation. The results showed that each of the elements was considered and contributed to care planning. However, patient preferences, values, and circumstances were the primary influence for clinicians. EBP was a dynamic process that changed over time and within contexts. Collaboration with the patient and between the members of the interdisciplinary team was essential to the delivery of care that truly integrated all three elements of the EBP approach.

KEY POINTS

1. The intersection of EBP elements is a complex and iterative process that is context dependent.
2. Patient values, preferences, and circumstances are the primary drivers of the EBP process.
3. Collaboration within the team, and between healthcare professionals and the patient is a vital component of a successful EBP approach.
4. Organisational support of *all* elements of EBP is necessary for the successful application of EBP in stroke rehabilitation.

DISCLOSURES

No funding was obtained for this study. There are no conflicts of interest which may be perceived to interfere with or bias this study.

PERMISSIONS

Ethical approval was obtained from the institutional research ethics board (reference number R19-020). Written informed consent was obtained from all participants. No permissions were required for the development of this manuscript.

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