Three educational approaches to enhance the evidence-based practice behaviour of Irish occupational therapists

Abstract: Occupational therapists worldwide are urged by their professional bodies and health delivery organisations to demonstrate evidence-based practice (EBP) by drawing upon all components of the best practice evidence triad: therapist’s clinical expertise, current research, and the client’s preferences. Many studies report that most practitioners have positive attitudes about evidence-based occupational therapy practice. Nonetheless, in their clinical decision making, most rely on their clinical expertise and the advice of colleagues without also integrating current research evidence. This apparent disconnect between attitudes and actual behaviour can be addressed through a range of continuing education models. This paper describes a three-pronged Irish approach aimed at both individual therapists and entire teams: (1) one day workshops introducing the knowledge and skills underpinning EBP; (2) a multidisciplinary university module teaching research utilisation skills and the implementation of change and leadership theories; and (3) a service development project fostering an evidence-based work culture through team learning.

Key words: Research utilisation, continuing education, service development.

Introduction

Evidence-based practice (EBP) has been a much debated issue since it emerged as a new paradigm for healthcare practice in the 1990s. It is now generally defined as clinical decision making which incorporates the evidence triad of clinical expertise, current research and the client’s preferences (Dawes et al 2005, Taylor 2007). By encouraging practitioners to maintain a critical attitude towards their own practice and evidence sources, EBP has been promoted as a way to improve services and make occupational therapists more accountable (Holm 2000). Many therapists are now finding themselves under pressure to justify the services they provide by demonstrating the use of research evidence, without which their scope of practice might be reduced (Murphy and Lin 2002). As Wu (2006) stated, implementing EBP would “increase the adequacy of occupational therapy practice, make occupational therapists more reflective and analytical, and raise the profession’s profile” (p. 4).

Within the Irish health care context, the Health Service Executive (HSE) has highly prioritised EBP since setting out its Transformation Programme in 2006. The Association of Occupational Therapists of Ireland (AOTI) maintains that occupational therapists should base their decision making on knowledge, clinical reasoning and research evidence with particular stress placed on introducing new research advances into practice (AOTI 2008). In 2007 and 2008, through a collaborative process involving AOTI and key stakeholders, the HSE funded and supported the development and publication of a set of twelve professional competencies to be attained by those completing an accredited occupational therapy educational programme. They include the ability to “integrate EBP principles into occupational therapy to ensure quality standards of practice” (HSE 2008, p. 10).

Although the rationale for evidence-based occupational therapy practice (EBOTP) is clear, the challenge is how to best support therapists in adopting a more evidence-based
approach in practice. For while the latter is defined as clinical
decision making based not only upon clinical expertise and
client preferences but also upon current research evidence,
many international studies have demonstrated that research
is the least used form of evidence by healthcare practitioners
(Curtin and Jaramazovic 2001, Humphris et al 2000). Not
only occupational therapists, but also physiotherapists and
speech and language therapists rely primarily on their pre-
qualification training, post-qualification practical courses,
clinical experience and opinions of colleagues when engaging
in clinical decision making, oftentimes without additionally
incorporating current research evidence (Gillam and Gillam

Despite these findings, over the past decade many interna-
tional studies report positive attitudes on the part of
clinicians regarding EBP, in the sense that they recognise
it as being important, whether or not they engage in it
themselves (Craik and Rappolt 2006, Curtin and Jaramazovic
seeming disconnect between positive attitudes about EBP
and actual low reliance on research evidence in clinical
decision making also exists among Irish occupational ther-
apists (Murphy and Robinson 2009, O’Shea 2011). Con-
sequently, three different continuing education approaches
for the development of therapists’ EBP knowledge and
skills have been used in Ireland in an attempt to support
greater use of current research evidence. In terms of time
commitment, they range from one-day workshops, to a
multidisciplinary university-based seminar which meets
for five full days over a four month period, to an eighteen-
month long service-embedded EBP project. As much as
possible, all three approaches incorporate the principles of
adult learning theory, experiential learning (or learning by
doing) and guidelines from the continuing medical education
literature. For example, some researchers have maintained
that EBP continuing education should ideally have the
following features: (1) involve identifying and taking into
account individual learner needs; (2) foster learning through
an interactive approach; (3) utilise multi-faceted teaching
strategies; (4) involve sequenced events as these aid rein-
forcement compared to single events; (5) provide individual
feedback and the opportunity for self-assessment; and (6)
provide learning that is embedded into clinical practice
(Khan and Coomarasamy 2006, Stern 2005). Though these
three approaches were designed to address the specific EBP
training needs of Irish occupational therapists, such a multiple
approach might prove beneficial in other contexts.

The Irish context

Regarding the learning needs of qualified Irish occupational
therapists, two recent studies (Murphy and Robinson 2009,
O’Shea 2011) have reported on the differing EBP knowledge,
skills and attitudes (KSAs) of relatively recent graduates
compared to long-qualified therapists. Being able to note
possible differences between these two groups is of interest
as many Irish therapists initially qualified through a three-
year diploma programme (no longer offered in Ireland)
which did not include a research component. All those who
have graduated since 2007, however, were enrolled in a
four-year Bachelor of Science or two-year Master of Science
educational programme during which they studied research
methods and completed research papers. In the 2009
Murphy and Robinson study, a KSA questionnaire on EBP
was mailed to 100 currently employed occupational ther-
apists; 57 were returned. Those responding reported clinical
experience ranging from less than one year to more than
forty years. The majority of respondents (74%) had been
qualified more than 5 years and hold senior grade or manager
level positions (81%). A second unpublished study (O’Shea
2011) focused on a convenience sample of 27 therapists,
out of 460 who have graduated in Ireland since 2007, for
whom current mailing addresses were obtained. These
recent graduates responded to a different, but similar, KSA
questionnaire on EBP. Overall, attitudes regarding EBP of
the recent graduates and experienced therapists are almost
identical and overwhelmingly positive. EBP is considered
important and necessary to OT practice by 91% of mostly
long-qualified therapists (Murphy and Robinson 2009)
and 93% of recent graduates (O’Shea 2011). The adoption
of EBP is perceived as placing “too many demands on me/
therapists” by only 16% of generally long-qualified therapists
(Murphy and Robinson 2009) and, similarly, 15% of recent
graduates (O’Shea 2011).

Congruent with the international literature cited above,
Irish occupational therapists reported greater reliance on
clinical experience than on research evidence when engag-
ing in clinical decision-making. Among Irish therapists
who were generally qualified more than 5 years ago, only
56% report referring to the current research literature,
whereas 98% use their clinical experience and the opinions
of colleagues as evidence sources (Murphy and Robinson
2009). The EBP behaviour appears to be different for more
recently qualified therapists. In the small O’Shea (2011) study,
78% reported regularly consulting research evidence.

Some international researchers (Dysart and Tomlin 2002,
Jette et al 2003, Zipoli and Kennedy 2005) have suggested
that it is those graduates who possess strong skills in
locating, evaluating and applying research evidence who
have more positive attitudes about EBP. In a 2003 study of
Australian occupational therapists, McCluskey surveyed 85
clinicians (67 returned questionnaires). Seventeen of the
respondents had less than 5 years experience, 50 had
worked more than 5 years. McCluskey (2003) reported that
a greater percentage of recent graduates were confident about their EBP abilities than those who had graduated more than 5 years earlier. The two recent Irish studies (Murphy and Robinson 2009, O’Shea 2011) had findings similar to McCluskey (2003). In the Irish studies, 93% or more of recent graduates reported confidence in their EBP knowledge and skills (O’Shea 2011); whereas the percentage of the generally more experienced therapists expressing confidence in these skill areas averages only in the high 50s (Murphy and Robinson 2009).

The results of the two Irish studies should not be over-interpreted, however, as they are based on very small sample sizes and therefore may not accurately reflect all practicing Irish occupational therapists. Nonetheless, two general observations, still tentative pending more extensive Irish research, might be worth noting. First, both relatively recent graduates and long-qualified therapists have similarly positive attitudes about EBP, which has positive implications for increasing EBP among Irish occupational therapists. Second, it is the recent graduates, who have all benefitted from a four-year occupational therapy education programme including training in formulating clinical questions, database searching and critiquing research, who appear to have the most confidence in their EBP knowledge and skills. Continuing education in EBP, then, is probably the key to long-qualified Irish occupational therapists becoming as confident in their EBP skills as more recent graduates.

Continuing education workshops on EBOTP

A continuing education initiative was undertaken by the Association of Occupational Therapists of Ireland (AOTI) subsequent to AOTI members communicating an interest in further training in EBP activities through a questionnaire distributed by the AOTI Continuous Professional Development Officer. A proposal requesting funding for a national programme of six separate workshops in the different regions of Ireland over a one-year period was accepted by the Health Service Executive (HSE), the country’s primary health service provider. An invitation to run the workshops was then circulated to the four universities offering occupational therapy programmes and workshop facilitators were subsequently recruited from these programmes. The free workshops were advertised on the AOTI and the HSE websites and the information was also circulated to the AOTI advisory groups such as that of the national occupational therapy managers. Occupational therapists of any grade or any area of practice were eligible to sign up. Within two weeks all six workshops had a full quota of 22 participants each and there were significant waiting lists. Workshops were delivered from October 2010 to May 2011.

Prior to each one-day workshop, a list of recommended readings was sent to participants. These included an article on the steps of the EBP process (Lin et al 2010), and one qualitative and one quantitative research article. The latter two were adapted to each specific workshop audience. During the seven-hour session, the EBP steps of forming a clinical question and critiquing evidence sources were discussed in depth. In small groups, the participants critically appraised the two research articles using the quantitative and qualitative review forms available for free on the McMaster University EBP research website. Time was also dedicated to considering the challenges and opportunities posed by EBP. The participants were asked to develop individual action plans for applying their learning to practice and for continuing their professional development in this area.

While these workshops have undoubtedly begun the process of meeting the EBP knowledge and skill needs of clinicians, they do not address all facets of the issue. Researchers report that while education about EBP improves knowledge, it has little impact on actually changing subsequent clinical behaviour (McCluskey and Lovarini 2005, Stevenson et al 2004). Consequently, AOTI is interested in assessing the impact of these workshops on the participants’ perceived confidence regarding the EBP process and their day-to-day practice. The evidence-based practice confidence scale (referred to as the EPIC scale) is an 11 item questionnaire designed to measure therapists’ confidence levels in their ability to implement the EBP process (Salbach and Jaglal 2010). Workshop participants were asked to complete the questionnaire prior to the workshop, immediately afterwards and six months after attending the workshop. Participants were informed about this research process and by returning the questionnaire consented to the findings being published.

It is expected that the results from these questionnaires will assist in addressing some of the factors which, according to the literature, pose difficulties for clinicians in changing from being experience-based to being evidence-based practitioners. These factors include (1) the generally didactic manner in which theoretical material must be delivered during short programmes due to time constraints and (2) the challenges inherent in changing established practice. During short workshops clinicians do not have the possibility of actually experiencing the entire EBP process, so it is difficult for them to appreciate the degree to which it involves questioning their current beliefs and behaviours. The challenge for therapists to integrate new EBP learning with their existing knowledge might be reduced if they were to have the opportunity to formulate a clinical question meaningful to their daily practice. From such a question, key words could be devised to guide a hands-on database
search. Then research critiquing skills could be practiced with the relevant articles found. Finally, their learning would be further re-enforced by actually experiencing the challenges of trying to implement that evidence. McCluskey et al (2008) describe the EBP process as having increasing levels of difficulty. They estimate that changing practice, so as to apply new evidence, is the most daunting.

This experiential approach, or learning by doing, is endorsed in the adult education literature where the process is often referred to as the active construction of knowledge. Theorists such as Knowles et al (2005) emphasise the need of adult learners to “own” the learning process in order to be motivated to utilise the new learning. By owning they mean that the adult learners should have opportunities to share control over the learning strategies while they are involved in an experiential learning process. Ideally the learning should also involve fostering problem-solving strategies that “educate for capability” (Greenhalgh and Russell 2006, p. 103), i.e. develop skills in a manner that makes them easily transferable to practice. It is, therefore, perhaps time for therapists to have a more collaborative role in developing the EBP programmes on offer.

University-based continuing education in EBP

With this in mind, in 2009 and 2010 after receiving ethical approval, one of the authors conducted a participatory action research (PAR) project with seven students. They included practicing occupational (1), speech (2) and physiotherapists (4) who enrolled in an inter-disciplinary post-qualification Masters’ module on EBP at University College Cork (UCC). Through this partnership the students and the module leader developed learner-centred approaches to facilitate embedding EBP knowledge, skills and behaviour into clinical practice. Over four months the students engaged in the PAR iterative cycles of reflecting→planning→acting→observing (Stringer 2007) as they drew upon their expertise as clinicians for insights and advice about the module’s design. The nominal group technique is an approach using both written responses and face-to-face discussion to arrive at a rapid consensus (Carpenter and Suto 2008). Employed at the end of each session, it allowed students to anonymously choose by majority vote what EBP content and teaching and learning approaches they wished to see integrated into the next class. These votes resulted in shifting the focus from merely acquiring research utilisation skills to problem-solving discussions incorporating how to initiate and lead EBP change in their respective work settings. The EBP literature repeatedly emphasises that an understanding of how individuals react to change and the processes involved in introducing and leading change is essential to the successful implementation of EBP and the development of the evidence-based work culture (Chard 2003, Hammond and Kloepenhouver 2005, McCluskey and Cusick 2002, Taylor 2007).

The EBP Masters’ module continues to be offered every autumn at UCC. A second cohort in 2010 included four occupational therapists, two speech and language therapists and one physiotherapist. Both cohorts cited the interactive and inter-disciplinary nature of the learning, where they had time to collectively debate and discuss specific workplace EBP challenges, to be the greatest strength of the module. The students felt empowered by their ability to decide on content and learning approaches which they tailored to their needs. By filling out the same questionnaire before and after the module, they were able to self-assess their progress in acquiring EBP knowledge and skills and a possible evolution in their attitudes. Regarding the importance of individual feedback advocated by Khan and Coomarasamy (2006), this university-based continuing education programme requires that students demonstrate their learning through continuous assessments which are marked by the module leader. Students submit a short reflective paper on why and how they integrate all, and not only part, of the best practice evidence triad (practitioner expertise, current research evidence and client’s preferences). During an oral presentation the students demonstrate their engagement in the entire EBP process including asking a specific clinical question relevant to their work, researching databases, critiquing the evidence found, formulating strategies for implementing practice changes based on the new evidence and devising methods for assessing the outcomes of their actions. The final written paper involves an in-depth analysis of the therapists’ working environments where they critically discuss the contextual factors that they judge as promoting or inhibiting EBP in their workplace. They then propose how they personally might address these factors so as to lead the development of a sustainable EBP culture in their own work setting. For example, a former student made specific suggestions as to how her workplace journal club might be conducted in a more efficient and effective manner and then actually put those suggestions into practice with the approval of her work colleagues.

The final assignment is intended to expand clinicians thinking about EBP to encompass the wider organisational context. At the beginning of this century, those promoting EBP became aware that even when the best available evidence is known, organisational and economic factors may make it difficult for therapists to change their customary practice (Iliott 2003). Individual clinicians are no longer seen as solely responsible for achieving EBP; rather there is a growing sense of collective responsibility (Lin et al 2010). In Ireland, the importance of this wider perspective
is reflected in the Children Acts Advisory Board (CAAB) 2009 report noting that the barriers to the use of research on an organisational level in Ireland are: reliance on the oral exchange of information, a failure to value research, a lack of resources to promote research use and a lack of a research culture. However, if EBP is to be addressed on an organisational level, this implies the development of a diverse range of skills which encompass and go beyond those underpinning the traditionally described EBP process. According to French (2005), these skills include the ability to: (1) translate evidence into a meaningful format for practice; (2) mediate the values, preferences and working practices of multiple stakeholders; (3) negotiate organisational complexity and the management of professional boundaries; and (4) coordinate inter-organisational and inter-agency working. In order to most effectively acquire these skills, several researchers (Jack et al 2003, Khan and Coomarasamy 2006, Stern 2005) have emphasised that continuing education programmes in EBP should ideally be embedded in the organisational contexts in which clinicians work.

Ryan et al (2006), in writing about the Irish healthcare context, state that “many change-implementation processes have failed due to lack of effective consultation with all relevant stakeholders and lack of coherent planning” (p. 35). For an evidence-based work culture to take root, then, there needs to be a plan for encouraging engagement by all of the important players within an organisation, particularly managers and senior clinicians. This is more difficult to accomplish if EBP learning is taking place outside of the workplace. New EBP knowledge and skills are more likely to be implemented if EBP activities are explicitly supported by managers and colleagues (Lin et al 2010, McCluskey and Cusick 2002). By taking this broader organisational approach, the necessary allocation of time and resources for EBP can be approved and planned for effectively. As an atmosphere of openness and informality within a team is important to introducing change in clinical practice (Chard 2003), this is easier to sustain if the whole team is working towards a commonly-agreed goal. If everyone is involved in the EBP process, knowledge and skill strengths of individuals can be shared with other team members. In addition, partnerships between clinicians and academicians to support EBP learning have been recommended in the literature (Lin et al 2010).

Service-based continuing education in EBP

With these factors in mind, in September 2010 an eighteen-month EBP continuing education/service development collaboration commenced between a University College Cork-based lecturer/facilitator and a Community Occupational Therapy Department in HSE West (Sligo/Leitrim/West Cavan). The facilitator requested that all team members partake in the project to give evidence of a group commitment to change (CTC). The theoretical foundations for such demonstrations of CTC and engagement in reflection have been reported in continuing education literature since the 1990s (Lowe et al 2007, Overton and MacVicar 2008, Wakefield et al 2005). These theories address issues raised by educational researchers such as Knowles et al (2005) regarding the role of “owning” new learning through concrete actions. Khan and Coomarasamy (2006) also stress the importance of the ties which develop between the learners and how publicly declaring to peers an intention to change practice motivates future behaviour.

The service development project began with a one-day face-to-face workshop in Sligo with the entire 12 member team and manager after one of the team members approached a university lecturer following a presentation she did on EBOTP at the 2010 AOTI Annual Conference. The first session included discussions on the team’s customary sources of evidence and how they might build an evidence-based culture incorporating the challenges of changing practice. The role of the manager in supporting their specific EBOTP efforts was explored with the manager present. Due to the distance separating Cork and Sligo, the four subsequent two-hour sessions were conducted via video conference. Between sessions, ongoing contact was maintained through an Internet chat forum where issues were discussed, tasks were assigned and documents were posted. The team collectively formulated a clinical question important to the entire service, several members did a database search with the assistance of the hospital librarian and everyone critiqued the relevant research literature. During the team’s reflections on their experience of the video conference sessions and performance of assigned tasks, they demonstrated their acquisition of the EBP skills of asking clinical questions, acquiring and appraising the best research evidence, and devising strategies for implementing new evidence. These strategies reflect the specific realities of the team’s client population, their colleagues in other disciplines with whom they collaborate and the organisational and economic parameters within which they work.

Though the project was initially led by the facilitator and a therapist, the team has come to take greater control of the peer learning experience. Increasing levels of confidence, enthusiasm and a collective will to master the necessary skills drive the EBP project. Though the guidance of the facilitator was felt to be necessary at the beginning, her input has become less important over time. For example, during the development of critical appraisal skills the team struggled to transfer research findings to their specific therapeutic environment or caseload. They might have abandoned their efforts at this point, relying rather on each others’
past clinical experience. However, with the facilitator’s support, the team persevered by dividing up the relevant research articles, completing critical appraisals of papers (CAPs) in pairs, then presenting these to the whole team. Everyone brainstormed a plan for implementation of the new evidence. The team-agreed schedule of video conferences incorporates clear deadlines for team assignments, providing a necessary time-lined framework. If the learning experience had been open-ended and without an established outcome, team members feel it would have proven difficult to remain focused and committed. Four members of the team and the facilitator presented their experiences of engaging in this EBP project at the AOTI Annual Conference in April 2011. The entire team will present the specific findings of their research implementation outcomes to a peer group in 2012.

Thus the experience of the actual doing of EBOTP by all team members has allowed everyone to assimilate and/or maximise their EBP skill use in daily practice. This embedding of EBP skills has occurred slowly and almost without explicit awareness until group reflection, as advocated by Lowe et al (2007), highlights the process. For example, upon reflection the team realised the interchange of skills occurring between newly qualified therapists, with their good grounding in research, and long-qualified therapists, with their years of clinical experience. All team members have demonstrated their value and importance to the balanced totality of the undertaking. The resulting team building experience has become a cornerstone of the project. It fosters respect for each others’ contributions and a shared ownership of the learning process. Crucially, the same sense of team unity underpins the drive to continue forward with a spirit of enthusiasm and fun. The team feels the culture of the Occupational Therapy Department has been subtly altered over time. Team members approach new projects by applying newly acquired EBP skills in preference to old habits of relying solely on a colleague’s past clinical experience as evidence for implementing clinical strategies in practice. Greater awareness of ways in which the team can continue to grow reinforces the embedding of the EBOTP skills within the team ideology. Team members feel that participating as individuals in an external learning process would not have afforded the same level of sensitivity to the team dynamics necessary for sustaining EBOTP activities. The explicit encouragement of management and related systems within the Irish Health Service Executive (HSE) has allowed adequate time and support structures to be provided for the therapists. These are critical to maintaining the team’s efforts of making EBOTP an integral part of their everyday working, thereby fostering an EBP culture within the Occupational Therapy Department and the larger health organisation.

At the beginning of the project, all Sligo team members completed an 85 item questionnaire on their self-perceived EBP Knowledge, Skills and Attitudes (KSAs) developed by and received from MC Taylor (personal communication, November 13th, 2008). Members will again complete this questionnaire at the end of the project. The findings regarding the evolution of their KSAs will be used to inform the development of comparable service-embedded EBOTP projects elsewhere in Ireland.

**Conclusion**

Changes in actual work behaviour, deemed the most challenging step of the EBP process, are essential if new research findings are to be translated from paper to practice. Having multiple approaches to continuing education in EBOTP knowledge and skills may be the best way to support occupational therapists in engaging in EBOTP behaviour. Some therapists may wish to initially engage by first attending a one-day introductory workshop. Others may already have basic EBOTP skills, or may have the seniority and/or financial resources to be able to engage further by participating in more in-depth educational opportunities such as a Masters’ module on EBOTP delivered over a four-month period. A service-embedded approach, where the entire occupational therapy team actively participates in guided learning through doing the EBOTP process over time, may best enable adoption of EBOTP behaviours. The authors feel that changes in work behaviour are optimally afforded if the culture of the entire workplace promotes them. The support of colleagues, management and other organisational structures are essential for therapists to implement new EBP knowledge, skills and behaviours. As the literature has reported (Chard 2003, Ilott 2003), EBOTP is difficult to sustain using an individual-centred approach. Creation of a work culture where it is established practice to integrate research into clinical decision-making is essential to support enthusiastic and motivated therapists to utilise the entire EBOTP triad, rather than relying solely on clinical expertise and client preferences. Therapists in other countries might also find it productive to establish partnerships between clinicians and academics. Service users will be the ultimate beneficiaries of the enabling of therapists’ EBOTP behaviour.

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