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Turning evidence into practice: Barriers to research use among occupational therapists

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Abstract

Introduction: Research has demonstrated that occupational therapists generally have a positive attitude regarding the use of evidence in their daily practice and decision-making. In addition, occupational therapists are expected to implement evidence-based practice, which is often understood as equivalent to research. However, evidence-based practice might be difficult to reconcile with occupational therapy from a client-centred focus. This study examines what occupational therapists perceive as barriers to research use and discusses the challenge of clinical implementation.

Method: This study uses a descriptive cross-sectional design. The Barriers to Research Utilization Scale questionnaire was mailed to 807 randomly selected Swedish occupational therapists. The response rate was 59%.

Findings: The occupational therapists identified three main barriers to the use of research: insufficient facilities (82%); lack of time to read research (77%); difficulty understanding statistical analyses (75%). Degree of education was shown to affect results; occupational therapists with higher education levels indicated a higher use of research.

Conclusion: Implementing research in clinical practice is a challenge. Occupational therapists are interested but they lack the optimal prerequisites and time.

Keywords

Clinical practice, support, survey

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Introduction

> 'The demand for maximum quality in health care, combined with the need for prudent use of resources, has increased pressure on health care professionals to ensure that clinical practice is based on sound evidence'. (Bennett and Bennett, 2000: p. 171)

As this quotation makes clear, occupational therapists are expected to provide services to clients based on knowledge and skills that are justified in terms of a systematic and shared body of professional knowledge (Polgar and Thomas, 2000), an expectation that requires occupational therapists to be up to date with relevant research areas. This mandate presents several challenges. For example, working in areas where there is still a lack of applicable evidence in terms of research and where individualized interventions based on patient needs and priorities are central, but rarely discussed. With these challenges in mind, occupational therapy models usually place the client at the centre of decision-making, an approach that requires balancing professional knowledge and client needs. Reagon et al. (2008) highlighted this dilemma by using a mixed method qualitative design incorporating focus groups, in-depth interviews and observations in order to explore perceptions on evidence-based practice (EBP) in occupational therapy. Reagon et al. (2008) concluded that occupational therapists in general typically associate EBP with the use of research but that this is only partially relevant in the treatment of individuals. Reagon et al. (2008) concluded that evidence-based occupational therapy should be based on a range of evidence, from research findings to clients' self-reports and subjective outcome measures, which corresponds with occupational therapists' conception of clinical reasoning as a complex process that takes multiple factors into account, also including the client-centred approach.

The practice of evidence-based medicine (EBM) has been defined as the integration of individual clinical expertise with the best available external clinical evidence from systematic research (Sackett et al., 1996). However, Sackett et al. (1996) also noted that external clinical evidence can inform but never replace clinical expertise; that is, clinical expertise should decide whether external evidence matches the needs of a client.

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Originating from EBM (Straus et al., 2011), EBP aims to integrate research findings into clinical practice in order to increase the quality of health care and improve patient outcomes (Kajermo et al., 2010). Straus et al. (2011), as well as Sackett et al. (2000), also concluded that the patient is an equally important partner with regard to the use of EBP: 'research evidence was integrated with clinical expertise and patient's unique values and circumstances' (Straus et al., 2011: p.1). As a consequence, in clinical practice, EBP should be defined as an approach to decision-making. For several decades, occupational therapy has been defined as a key partner for every form of decision; that is, occupational therapy should always use the best evidence available when making decisions and should consult with the client to provide the most suitable options (Kielhofner, 2006). Evidence-based occupational therapy is described as 'the client-centred enablement of occupation, based on client information and a critical review of relevant research, expert consensus, and past experience' (Canadian Association of Occupational Therapists, 2009). Dijkers et al. (2012) described a great number of factors influencing a clinician's decision-making where research is just one among a number of other aspects affecting this process.

In spite of the above concerns, most occupational therapists talk about EBP as equivalent to research (Reagon et al., 2008). Based on the definition of EBP, an important part of an EBP is, after all, to use relevant research combined with professional experience and patients' needs when developing a treatment plan for a particular patient. Clearly, implementing EBP is a complex process and, in order to encourage occupational therapists to work more consciously with an EBP approach, will require identifying potential barriers and solutions to these barriers.

The Barriers to Research Utilization Scale (Funk et al., 1991) is a widely used questionnaire, especially in nursing research (Kajermo et al., 2010). The questionnaire, also called the BARRIERS Scale, was developed by Funk et al. (1991) by examining the literature on research utilization and gathering informal data from nurses. Extensive lists of potential items were then generated and presented to research utilization consultants, nursing researchers, practicing nurses and a psychometrician. The items in the questionnaire were identified to establish a consensus about face and content validity and these items were pilot tested. In addition, group discussions were conducted. As result of the pilot test and the discussions, 29 items were randomly ordered to form the scale. A factor analysis was used to identify the underlying four main dimensions or factors (Funk et al., 1991). The BARRIERS Scale was used in the United Kingdom (UK) for occupational therapists in paediatric settings reporting moderate to low levels of self-reported behaviours, skills and confidence and positive attitudes towards the concept of EBP (Lyons et al., 2010). These results were also confirmed in studies from, for example, The Netherlands (Döpp et al., 2012), New Zealand (Graham et al., 2013) and Australia (Bennett et al., 2003). Results from a study by Karlsson and Törnqvist (2007) indicate that reviewing research in order to update relevant knowledge and applying research findings were the most important research-related activities reported by occupational therapists. Research-related activities were considered to be important for future professional development and roles, but high workload and lack of time were frequently mentioned as barriers to participation in such activities (Karlsson and Törnqvist, 2007).

Heiwe et al. (2011) evaluated the attitude to EBP among dieticians, occupational therapists and physiotherapists in a large university hospital setting in Sweden. The results showed a positive belief and attitude towards EBP and a behavioural pattern including being aware of, accessing and using evidence-based guidelines. Lack of time was perceived as the major barrier to EBP.

In spite of these above studies, more knowledge on occupational therapists' attitudes toward EBP and the use of research findings in practice is needed to understand how to facilitate EBP. Thus, the objective of this study was to examine the perceived barriers to research utilization in a random sample of occupational therapists.

Method

This study had a descriptive cross-sectional design. A postal questionnaire and a letter of invitation were sent to 807 Swedish occupational therapists, who were randomly selected from the FSA membership registry (the Swedish Association of Occupational Therapists), representing about 10% of occupational therapists in Sweden. The letter included information about the study and an addressed return envelope. After three weeks, a reminder was sent out to those who had not responded. The response rate was 59%; 472 of the 803 questionnaires were returned.

The postal questionnaire included some demographic questions on age, gender, level of education, working hours, years of experience as an occupational therapist, main working area and current position. The BARRIERS Scale developed by Funk et al. (1991) was included to enable an analysis of perceptions of barriers to research utilization. An additional item referring to the English language as a possible barrier was added in accordance with another study (Kajermo et al., 1998). The questionnaire has been reported to have good internal consistency (0.84–0.96) (Funk et al., 1991; Kajermo et al., 2010) as well as reliability, $r = 0.63$–0.83 (Funk et al., 1991). The questionnaire has been widely used internationally and thus brings a lot of possibilities for comparison. The questionnaire has also been found to reveal differences in the perception of barriers between research users and non-research users (Boström et al., 2008). Thus, methodologically the scale appears useful in identifying general types of barriers to research utilization, but does not identify organizational barriers (Kajermo et al., 2010). An adjustment to the wording introducing each item was made in accordance with other studies (Baernholdt and Lang, 2007; Kuuppelomaki and Tuomi, 2003) to make sure that the answers were from the

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occupational therapists' own perspectives and not an opinion about what occupational therapists in general might think. For example, the statement 'The nurse does not have time to read research' was changed to 'I do not have time to read research'. Each item was rated on the original 4-point scale, reflecting the perceived level of the barrier (1 = to no extent; 2 = to a small extent; 3 = to a moderate extent; 4 = to a great extent).

Ethics

The study did not require approval from the local ethical committee (prop. 2002/03:50 p.91) as no intervention took place and the results were collected anonymously.

Data analysis

SPSS Statistics 20 was used for statistical analyses. The mean of each item in the BARRIERS Scale was calculated and presented together with the SD. One-way analysis of variance was used for comparisons between groups regarding the degree of education and years of practice as an occupational therapist. A p-value <0.05 was considered statistically significant.

Data were analysed by comparing results from the questionnaire in relation to the degree of education and years of practice. The degree of education was categorized into three groups: higher education such as a PhD, licentiate degree or MSc; a primary degree such as BSc; a non-university degree (diploma). 'Years of practice as an occupational therapist' was categorized into the following groups: 1–10 years; 11–20 years; >20 years. The internal consistency of the BARRIERS Scale index was tested, resulting in a Cronbach alpha coefficient of 0.88.

Findings

As expected, most of the participants were female (96%). The mean number of working years was 15 years (SD 10 years, range 1–40 years) and 84% were employed as occupational therapists, 6% were employed as managers and 10% were employed in other positions. The occupational therapists were employed by National Health Care (48%), community care (38%), private facilities (7%) and a national institute or a foundation (7%). Demographic data are presented in Table 1.

Table 1. Demographics of participants ($n = 472$).

Characteristic	%
Age	
≤29 years	9
30–39 years	26
40–49 years	28
≥50 years	37
Gender	
Female	96
Male	4
Level of education	
PhD	2
Licentiate	3
Master of Science	8
Bachelor of Science	61
Non-university degree (diploma)	26
Employer	
County council	48
Municipality	38
Private	y
State or foundation	y
Experience as occupational therapist	
1–10 years	39
11–20 years	30
≥21 years	31
Working hours	
Full time	61
Part time	39
Main working area	
Occupational rehabilitation	6
Habilitation	13
Assistive devices	21
Psychiatry	10
Somatic	35
Education	2
Other	13

The frequency of participants scoring items as a moderate barrier (score 3) or a great barrier (score 4) is presented in Table 2. A high proportion scored 3 or 4 on items such as 'Facilities are inadequate for implementation' (82%), 'Statistical analyses are not understandable' (75%) and 'I do not have time to read research' (77%). Two of the 29 suggested barriers had a mean score of >3 points (that is, high agreement with being a barrier): 'Facilities are inadequate for implementation' and 'I am isolated from knowledgeable colleagues with whom to discuss the research' (both with a mean value of 3.07).

Occupational therapists with a non-university degree (indicating an older education and longer in practice) perceived significantly greater barriers in nine of the 29 items. The largest difference related to the fact that research reports/articles are written in English and an inability to evaluate the quality of research (Table 3).

Item scores in relation to years of practice showed differences between groups (1–10 years, 11–20 years and 21 or more years of practice) for four items (Table 4). 'Insufficient time to implement new ideas' and 'Research reports/articles not readily available' had higher mean scores in groups with fewer years of practice, whereas the opposite result was found regarding 'I am unwilling to change/try new ideas' and 'Research reports/articles written in English', where those with more years of practice had higher mean scores (that is, greater barriers).

Discussion

This study examines the perceived barriers to research utilization in a random sample of occupational therapists. As with earlier studies, this study found that, although

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Table 2. Rank order of mean values for items in the Barriers Scale, SD and proportion of participants scoring items as a moderate barrier (score 3) or a great barrier (score 4).

Item	Mean (SD)	Scoring 3–4 (%)
Facilities are inadequate for implementation	3.07 (0.73)	82
Isolated from knowledgeable colleagues with whom to discuss research	3.07 (1.02)	73
I do not have time to read research	2.98 (0.76)	77
Relevant literature is not compiled in one place	2.85 (0.92)	67
There is insufficient time on the job to implement new ideas	2.84 (0.74)	74
Statistical analyses are not understandable	2.66 (0.79)	75
Research reports/articles are not readily available	2.61 (0.95)	59
I feel results are not generalizable to own setting	2.52 (0.76)	53
Research is not reported clearly or easy to read	2.49 (0–73)	50
Implications for practice are not made clear	2.49 (1.09)	69
Other staff are not supportive of implementation	2.37 (0.83)	41
I don't feel I have enough authority to change patient care procedures	2.36 (0.87)	41
I do not feel capable of evaluating the quality of the research	2.36 (0.77)	44
The research has not been replicated	2.34 (0.67)	40
Research reports/articles are written in English	2.25 (0.98)	42
Research reports/articles are not published fast enough	2.24 (0.71)	34
Physicians will not cooperate with implementation	2.22 (0.90)	34
The literature reports conflicting results	2.20 (0.59)	26
There is not a documented need to change practice	2.14 (0.83)	33
Research has methodological inadequacies	1.91 (0.56)	10
I am uncertain whether to believe the results of the research	1.88 (0.66)	16
I see little benefit for self	1.86 (0.76)	18
I am unaware of the research	1.84 (0.78)	19
I feel the benefits of changing practice will be minimal	1.84 (0.66)	12
The conclusions drawn from the research are not justified	1.78 (0.52)	5
Administration will not allow implementation	1.76 (0.79)	16
I do not see the value of research for practice	1.58 (0.61)	6
I am unwilling to change/try new ideas	1.30 (0.49)	1
Research is not relevant to occupational therapist's practice	1.29 (0.54)	3

Higher mean score = greater barrier.

Table 3. Differences in item scores by level of education.

Item	Higher degree, mean (SD)	BSc, mean (SD)	Non-university degree mean (SD)	*F*	*P*
Research reports/articles written in English	1.88 (0.95)	2.20 (1.00)	2.55 (0.86)	9.528	<0.001
Not capable of evaluating quality of research	2.00 (0.79)	2.34 (0.79)	2.59 (0.67)	6.072	<0.001
Benefits of changing practice will be minimal	1.59 (0.57)	1.84 (0.67)	1.97 (0.66)	5.567	0.004
I am unwilling to change/try new ideas	1.18 (0.39)	1.28 0.48)	1.40 (0.53)	4.050	0.018
Not a documented need to change practice	2.14 (0.87)	2.07 (0.82)	2.34 (0.84)	4.007	0.019
Isolated from colleagues to discuss research	2.84 (1.09)	3.03 (1.03)	3.28 0.94)	3.995	0.019
Statistical analyses not understandable	2.42 (0.86)	2.65 (0.80)	2.79 (0.72)	3.861	0.022
Results not generalizable to own setting	2.31 (0.74)	2.48 (0.73)	2.70 (0.80)	3.138	0.004
I do not see the value of research for practice	1.41 (0.57)	1.58 (0.63)	1.67 (0.58)	3.136	0.044

One-way analysis of variance. Higher mean score = greater barrier.

occupational therapists are interested in and value the importance of implementing research in clinical practice (Pighills et al., 2013), 'it might be easier said than done' (Bennett et al., 2003; Döpp et al., 2012; Graham et al., 2013; Lyons et al., 2010).

Our results confirm that implementing research in clinical practice is time consuming, as it requires both time to search for evidence and to reflect on whether the identified evidence could be applied to a specific field of work and/or with a current patient group or individual (Kielhofner,

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Table 4. Differences in item scores by years of practice.

Item	1–10 years, mean (SD)	11–20 years, mean (SD)	≥21 years, mean (SD)	*F*	*P*
Insufficient time to implement new ideas	2.93 (0.73)	2.93 (0.72)	2.61 (0.73)	8.910	<0.001
Research reports/articles not readily available	2.80 0.94)	2.48 (0.91)	2.49 (0.96)	6.215	0.002
I am unwilling to change/try new ideas	1.22 (0.43)	1.34 (0.51)	1.36 (0.53)	3.714	0.025
Research reports/articles written in English	2.11 (0.98)	2.31 (1.01)	2.39 (0.91)	3.337	0.036

One-way analysis of variance. Higher mean score = greater barrier.

2006). The results also underscore the conflict that may exist in clinical practice when it comes to use of time. New research is presented at an increasingly rapid pace, whereas time for searching and, above all, reflecting and evaluating the relevance of new research might be very hard to prioritize when increasing demands on fast and goal-directed actions occur simultaneously. It takes time to reflect and decide on the usefulness and transferability of the assessment and treatment methods as well as findings from a research context and translate that evidence into a clinical context (Wressle and Samuelsson, 2014). It also takes time, knowledge, experience and sometimes also courage to judge whether results from research are relevant for a specific client, which is a key question in a client-centred practice of occupational therapy (Kielhofner, 2006). As many occupational therapists consider EBP to be the way to establish credibility to our profession, it is important to carefully consider the relevance and implications of such an approach and to face its challenges (Honojosa, 2013).

Results from the present study confirm that higher level of education seems to have a positive impact on some of the barriers, although the correlations were not very strong. Cameron et al. (2005), however, found that increased levels of education correlated with a decreased view of the importance of research and that, as the years of practice increased, the use of research evidence in making clinical decisions decreased. McCleary and Brown (2003), however, reported that higher levels of education were associated with positive attitudes towards research and higher levels of self-reported research utilization among nurses. The authors concluded that education about research may be one way to overcome negative attitudes towards research as a barrier to research utilization, a finding in concordance with a recent systematic review on attitudes, knowledge and implementation of EBP (Upton et al., 2014). Thirty-two studies were included in this review, demonstrating mostly not only a positive attitude towards EBP but also a negative attitude referring to the effort and difficulties in the transition of research into practice (Upton et al., 2014). In addition, McCleary and Brown found that occupational therapists with a non-university degree of education perceived significantly more and greater barriers, a finding that agrees with the current study and other studies (Bennett et al., 2003; Craik and Rappolt, 2006; Graham et al., 2013). This finding highlights the need for continuing scientific education and practice. In addition, researchers must also take their responsibility in this matter and as Sander et al. (2013) conclude, researchers must be aware of the challenge and exert efforts to promote effective translation of their research into practice.

Although some occupational therapists believe they lack the knowledge and skills necessary to implement research in clinical practice (Upton et al., 2014), this does not seem to be the only challenge for future practices (McCluskey, 2003; Philbert et al., 2003). Reagon et al. (2008) concluded that:

> 'Acknowledgement of a range of evidence, from research findings to clients' self-reports, corresponds with participants' conception of clinical reasoning as a complex process that takes multiple factors into account. This together with participants' client-centred approach and emphasis on the human experience of health encounters forms the basis of a reconfiguration of evidence-based occupational therapy'. (p.428)

The importance of discussing the effectiveness of proposed interventions with any specific patient is supported by definitions of EBP that include professionals' own experience and consider the patient as an equally important part of the process (Upton et al., 2014). If EBP is seen as the judicious use of current best evidence, including professional experience as well as a client's needs and demands, then occupational therapists should not have any conflict about using an EBP philosophy together with a client-centred philosophy in their everyday practice (Taylor, 2000). In the review by Upton et al. (2014), results illustrated that a number of studies identified colleagues and personal clinical experience as important in decision-making.

However, one crucial factor for EBP is access to and interest in searching for and considering results from relevant research, which was the main focus in the present study. But it takes time to search for relevant research, moreover, it takes time to consider the relevant information in light of the needs of individual clients. Thus, it requires evidence (research evidence, clinical expertise and patient values), support and time to create the conditions to implement research in clinical practice.

Strategies are needed that address the barriers to the clinical use of EBP. Lin et al. (2010) suggest that, for EBP to become integrated into practice, greater communication and collaboration between decision-makers must occur;

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both practitioners and employers have an important role in this. Grimshaw et al. (2012) highlighted that an important base for knowledge translation is to use up-to-date systematic reviews or other synthesis of research findings that are easy to assimilate.

Perhaps the most crucial aspect of the EBP process is clinical reasoning and the use of evidence together with the client and within a certain context. If researchers were to be more active in clinical settings and collaborate with experienced clinical colleagues, then research questions and research designs might be closer to practice and findings more easily implemented (Sudsawad, 2005). There is also a considerable knowledge effect from this approach since clinicians will learn from researchers and vice versa. This obviously requires support and resources from both colleagues and management, but the approach might be cost-effective in the long term. It would be very interesting and probably very valuable from a practical perspective to study clinical outcomes with regard to client satisfaction and professionals' compliance to EBP in a clinical setting with versus without a tradition of research. As far as we know, no such study exists.

Study limitations

This study's strengths include the random selection of participants and the relatively high response rate. In addition, the questionnaire was shown to have a high level of internal consistency, as confirmed in earlier studies (Baernholdt and Lang, 2007; Kuuppelomaki and Tuomi, 2003). However, the questionnaire was developed about 25 years ago and it might not reflect all aspects of today's thoughts on EBP and what is affecting its use. Kajermo et al. (2010), based on a systematic review, suggest that the BARRIERS Scale should not be used as it seems to be a non-specific tool reflecting only general barriers to research utilization and it is probably not a useful tool in evaluating implementation interventions. Although the scale has been found to have a weak correlation, it is still significant enough to discriminate between research users and non-research users with regard to the perception of barriers (Boström et al., 2008). Boström et al. (2008) also highlight the lack of items in the BARRIERS Scale to identify organizational barriers to research utilization and items reflecting patient perspectives and the wider environment.

Although the scale could not provide answers to all the questions related to the use of research in clinical practice, the scale gives important support to how to conduct further discussions on the use of EBP in occupational therapy and how EBP could be interpreted in an efficient way, efficient from the client's as well as the therapist's perspective.

Conclusion

Occupational therapists have an interest in research and EBP (Karlsson and Törnqvist, 2007). Results from the study illustrates that barriers to research utilization might be multi-factorial. Those barriers identified by most occupational therapists were related to aspects of settings (facilities are inadequate or lack of time to read and to implement) and presentation and accessibility of research (relevant literature is not compiled in one place, statistics are not understandable and implications for practice are not made clear). When it comes to questions related to the implementation of research in the work with individual clients, the BARRIERS Scale lacks important questions on factors related to a client-centred approach and the need for individual adjustment of interventions based on a client-centred approach. Nevertheless, being up to date on research is a prerequisite for being able to use that kind of evidence in clinical practice – EBP and results support the fact that occupational therapists need time, away from routine clinical practice, education on finding and evaluating evidence, access to evidence and mentorship and support in the implementation process.

Key findings

Occupational therapists have an interest in research relevant to improving practice but are hindered by organizational factors and a lack of time.

What the study has added

The study highlights the importance of good leadership, support from colleagues and dedicated time with regard to the implementation of EBP. However, implementing EBP is not just about research; many other factors should be addressed and these factors (client needs, clinical setting, etc.) should be more thoroughly addressed in future studies.

Research ethics

Ethics approval was not required for this study.

Declaration of conflicting interests

None declared.

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