PREPUBLICATION VERSION

Implementing Evidence-Based Practice: A Review of the Empirical Research Literature[1]

Abstract

The paper reports on the findings of a review of empirical studies examining the implementation of evidence-based practice (EBP) in the human services. Eleven studies were located that defined EBP as a research-informed, clinical decision-making process and identified barriers and facilitators to EBP implementation. A thematic analysis of the findings of the 11 studies produced a list of barriers to EBP implementation grouped in terms of: inadequate agency resources dedicated to EBP; skills and knowledge of practitioners; organisational culture; the research environment; practitioner attitudes; and inadequate supervision. Given the limited and exploratory nature of available research on EBP implementation, tentative findings suggest that to facilitate the uptake of EBP in social work and human services practice, strategically-driven, adequately-resourced, multifaceted approaches to EBP capacity building in organisations are needed.

Key words: knowledge transfer, research implementation, evidence-based practice, human services, systematic review

[1] Gray, M., Joy, E., Plath, D., & Webb, S.A. (2013). Implementing evidence-based practice: A review of the empirical research literature. *Research on Social Work Practice*, 23(2), 157–166.

Social workers wishing to improve the quality and efficiency of human services will find help in research evidence. Forms of evidence are increasingly accessible through information services that combine high quality evidence with information technology. However, the research literature has identified several barriers to the successful application of research evidence to human services. We discuss the problems that practitioners – social workers, policy makers, and service users – will need to overcome and the factors that facilitate the benefits of research. Over the last decade, the implementation of knowledge-based human services has been a policy priority for many countries. Evidence-Based Practice (EBP) is based on the notion of a linear model of knowledge production and transfer whereby research findings (knowledge in the knowledge transfer literature) produced in one location is transferred to the context of use through various mechanisms, such as the development of intervention guidelines or treatment protocols. Hence there are various steps in this linear process from knowledge development, generation, or production to knowledge translation, transfer, diffusion, dissemination, and utilisation or implementation in practice (Graham et al., 2006). This linear model implies the need for a process by which research evidence is systematically transferred for utilisation in policy or practice. It has spawned a field of study known as implementation science (Eccles & Mittman, 2006; Proctor et al., 2009). In recent years, this field has been a source of much debate and innovation across the human services, including social work, community services, child protection, and mental health. The relationship between research and practice in the human services is, however, complex and not well understood. In part, this is due to the complexities involved in formalising knowledge as well as attempts to systematise research at different levels of priority and relevance.

The advent of EBP has placed an unwritten ethical imperative on human service practitioners to ensure, as far as is possible, that interventions are informed by current best

available research evidence about the most effective interventions and outcomes (Gambrill, 2011; Gibbs & Gambrill, 2002; Sackett, Strauss, Richardson, Rosenberg, & Haynes., 2000; Thyer, 2004, 2009; Thyer & Myers, 2011). Central to EBP, however, is the need for critical appraisal of the nature and strength of research evidence, as well as the impact of contextual features in the practice setting. Importantly, changes in practice need to occur as a result of this process. Each of these steps entails the dedication of human resources and the resolution of differing interpretations and perspectives. Understandably, therefore, EBP in the human services has been characterised by debate and gaps in understanding (Gray, Plath, & Webb, 2009). Alongside the generation of research findings to inform human service practice, then, is a burgeoning literature on the processes involved in EBP implementation (Bhattacharyya, Reeves, & Zwarenstein, 2009; Mullen, Bledsoe, & Bellamy, 2008; Nutley, Walter, & Davies, 2009; Proctor & Rosen, 2008; Proctor et al., 2009). This literature is designed to generate better understanding of how to move from the production of research findings to improved practice at the frontline: 'Implementation research concerns the production of knowledge that can help practitioners actually use and apply responsibly and reliably in practice the products of intervention research' (Proctor & Rosen, 2008, p. 287).

This paper reports on the outcomes of a review of empirical studies relating to the implementation of EBP in the human services. It was conducted in accordance with the principle of 'best available evidence' following the University of York's Centre for Review and Dissemination's (2009) systematic review guidelines for healthcare. While findings from reviews of EBP implementation in the fields of health and education might be transferable to human service settings, no prior reviews of EBP implementation in social work or the wider human services field were located (Bhattacharyya et al., 2009; Gira, Kessler, & Poertner, 2004; Innvaer Vist, Trommald, & Oxman, 2002). The review sought to synthesise findings

from published empirical studies that addressed the research question: What are the barriers and facilitators to EBP implementation in the human services?

Key criteria for inclusion

To qualify for inclusion in the review of the empirical literature, papers had to:

- Define EBP as a clinical decision-making process as this was found to be the most commonly used definition in social work (Gray et al., 2009).
- Demonstrate a concern with the barriers and facilitators to EBP implementation in the human services, including practitioners' perceptions of EBP implementation as one of the domains in which barriers or facilitators are located.
- Report results from original empirical research on EBP implementation.
- Focus on the human services context for EBP implementation, that is, some representation of social care professionals (social workers, welfare workers, or community workers) in the research participant group was required.
- Be written in English.
- Be published from 2000, as it was around this time that EBP began to make an impact in the social work literature.

Anticipating that there were few studies examining EBP implementation in this sector, no studies were excluded on methodological grounds (Bellamy et al., 2006; Wells & Littell, 2009) with validation of research quality to some extent guaranteed by publication in peer-reviewed journals.

1. Definition of EBP

Since it was the dominant definition of EBP used in social work literature, we adopted Sackett et al.'s (2000) definition of EBP as a process of clinical decision making that entails

‘the integration of best research evidence with clinical expertise and patient values’ (p. 1) involving five steps:

1. Convert one’s need for information into an answerable question.
2. Locate the best clinical evidence to answer that question.
3. Critically appraise that evidence in terms of its validity, clinical significance, and usefulness.
4. Integrate this critical appraisal of research evidence with one’s clinical expertise and the patient’s values and circumstances.
5. Evaluate one’s effectiveness and efficiency in undertaking the four previous steps, and strive for self-improvement.

EBP is not clearly or consistently defined in the human services and much ambiguity prevails. Following developments in psychology, EBP terminology is often used to describe empirically supported treatments (ESTs) or empirically supported interventions (ESIs). That is, standard, manualised interventions for which a body of research evidence on the effectiveness of outcomes has been compiled. This confusion centres on the use of the verb evidence-based practice as a noun, literally an evidence-based practice or in the plural evidence-based practices (Thyer & Myers, 2011). In the social work literature, the failure to distinguish between evidence-based practice as a decision-making process and evidence-based practices, as well as between evidence-based information and evidence-based practice, directly impacts on how implementation research is approached. There is also a lack of clarity around what the verb evidence-based practice actually represents. The papers appraised for the review had divergent or vague definitions of EBP or did not define it at all. As described above, those studies included in the final review defined EBP, or had an implied definition of EBP, as a clinical decision-making process. Several studies included in the

review also identified a lack of understanding of EBP among practitioners in the human services as a barrier to EBP implementation.

Many studies located as part of the review process used the term EBP to mean empirically supported interventions (ESIs) rather than as a clinical decision-making process (e.g., Aarons, Fettes, Flores, & Sommerfeld, 2009; Aarons, Sommerfeld, Hechht, Silovsky, & Chaffin, 2009b; Carstens, Panzano, Mansatti, Roth, & Sweeney, 2009, Chamberlain et al., 2008, Corbie`re et al., 2010; Felton, 2003; Gustle et al., 2007, 2008; Henderson, Mackay, & Peterson-Badali, 2006; Palinkas et al., 2009; Sobeck, Abbey, & Agius, 2006; Stern, Alaggia, Watson, & Morton, 2008). A few studies acknowledged the difference between EBP and ESIs and fewer still attempted to reconcile the relationship between the two constructs (Bellamy, Bledsoe, & Traube, 2006; Manuel et al., 2009; Palinkas et al., 2009). Even though many of these studies used the language of EBP or EBPs (evidence-based practices plural) they were excluded from the review on definitional grounds.

2. Demonstrate EBP implementation

Empirical studies that examined strategies, interventions, or processes designed to promote EBP uptake, together with the identification of factors that facilitated or impeded these processes, were of central interest. These EBP implementation processes included dissemination, education, marketing, and supervisory techniques (Bhattacharyya et al., 2009; Gira et al., 2004). We also included studies on practitioner perceptions of the factors supporting and impeding EBP uptake as we saw research on practitioners' views on the barriers and facilitators to EBP uptake as relevant to our study. As a result, the EBP implementation research of interest in the review included diverse study designs, contexts, and interventions. While this reflects the approach to EBP implementation in the human services and the nature of the research examining this, it would have presented challenges to

the compilation and tabulation of findings for a more rigorous systematic review (Sharland, 2012; Soydan, 2008; Wells & Littell, 2009).

Methods

Search strategy

During 2010, one member of the research team conducted searches of the databases Social Work Abstracts (2000–8 June 2010), MEDLINE (2000–8 June 2010), ERIC (2000–10 June 2010), Social Science Journals (2000–8 June 2010), and PsycINFO (2000–8 June 2010) and reference lists of articles. The search terms for the electronic search were: (i) Social work$ OR community service$ OR human service$ OR social care OR social service$ OR welfare; (ii) Disseminat$ OR implement$ OR appl$; and (iii) Evidence-based practice OR professional practice OR professional training OR best practice. This was followed by a search that joined the three searches with 'AND'. Researchers in the field were also contacted to identify key research studies and handsearching of the electronic versions of journals *Research on Social Work Practice* (2000–July 2010), *Child and Family Social Work* (2000–July 2010) and *Journal of Evidence-Based Social Work* (2004–2010). Two members of the research team independently assessed the relevance of retrieved articles, described the methods of included studies, and extracted data that were summarised in tables and analysed qualitatively.

Data collection and analysis

The titles and abstracts of articles were screened initially against the inclusion criteria. Full papers of this initial list of items were then independently reviewed for final inclusion and critically appraised using an adapted CASP Critical Appraisal tool by two researchers. Information was extracted by both reviewers on: bibliographic details; research question/hypothesis; study design/methodology; EBP implementation intervention (if any);

population/setting; sampling; summary of results; and methodological critique/limitations. Each paper was then discussed by the reviewers in turn and any differing perspectives that arose were taken to the full research team for further discussion and resolution. A third member of the research team was involved as a reviewer in the critical appraisal process if the two reviewers could not reach a consensus regarding inclusion of an item.

When the final list of studies was determined, the fourth member of the research team, together with one of the initial reviewers, conducted a thematic analysis of findings for each of the included items. The findings presented in each of the included studies were analysed in order to extract data that related to barriers and facilitators to EBP implementation. Focusing on barriers and facilitators as the core item for data extraction from the findings enabled a compilation of aggregated findings across the 11 studies. Categories of barriers and facilitators to EBP implementation were inductively established. Initially the findings of each study were coded independently by each of the two reviewers to delineate findings relating to barriers and facilitators. This was followed by a collaborative review process to establish the final categories. The findings presented in each study were again reviewed to determine the frequencies for particular categories of barriers and facilitators across all included studies. As with all qualitative data analysis, an element of interpretation is present both in the original studies and in the extraction and aggregation process. We aimed for maximum transparency by using a team approach to decision making, a clear articulation of definitions and criteria, and thorough documentation of the process followed.

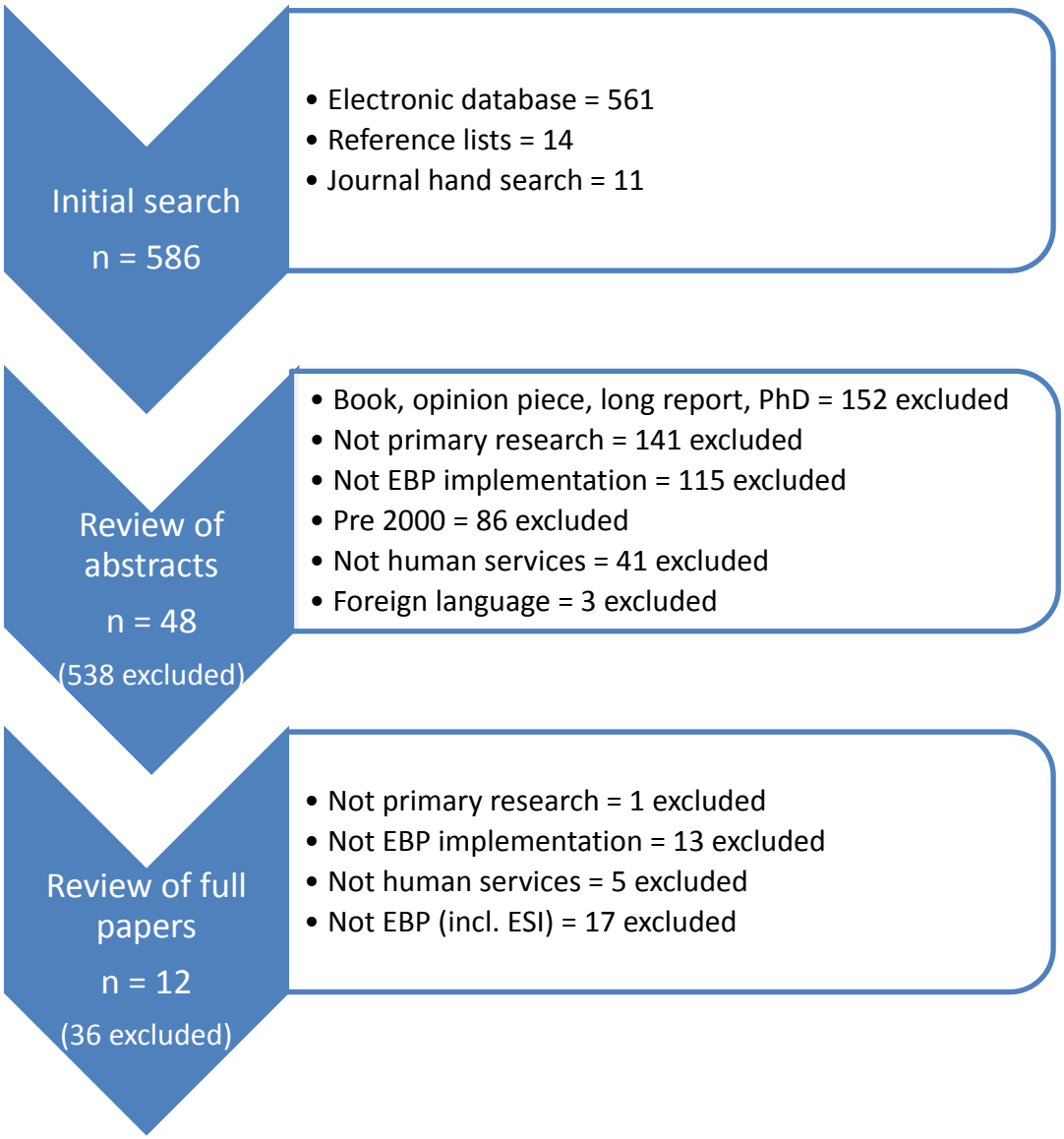
Results

Search results

Eleven studies met the inclusion criteria. The initial search generated 586 items which, following the review and exclusion process resulted in 12 publications for inclusion in the

review. Two of these publications related to the same study, thus the findings from 11 studies were included in the analysis. Figure 1 provides a summary of the number of items excluded and reasons for exclusion.

Figure 1: Flowchart of item review and exclusion process



Seventeen (35%) papers were excluded as EBP was not used to mean an evidence-informed clinical decision-making process. Approximately one quarter of studies (24.2%) was

excluded because they did not report original empirical research but extrapolated findings from other studies of EBP implementation in professions such as nursing, medicine, and psychology. Though many papers were concerned with EBP in the human services, they did not explicitly address its implementation; 21.8% of papers were excluded on these grounds and 7.8% because the participant group did not represent the human services. Of the 48 full papers reviewed, 12 papers reporting on 11 studies met the inclusion criteria. The studies were undertaken in the USA (n=5), UK (n=5), and Australia (n=1) (see Table 1).

Study designs and methods

Four of the 11 studies examined human service practitioners' and managers' perceptions of the factors affecting the use of EBP (Barratt, 2003; Booth, Booth, & Falzon, 2003; Burke & Early, 2003; Murphy & McDonald, 2004). Data for these studies were gathered using questionnaires, interviews, focus groups, or a combination of these methods. Seven studies evaluated the impact of an intervention to support EBP implementation in the workplace. For the purpose of our review, we were concerned primarily with the identification of the barriers and facilitators to EBP implementation associated with these interventions, rather than the effectiveness of the interventions as such. The intervention studies included examinations of participants' experiences with the intervention and their perceptions of the factors affecting their effectiveness in promoting EBP. The interventions involved training modules for social workers delivered through a university partnership (Manuel, Mullen, Fang, Bellamy, & Bledsoe, 2009); structured professional supervision to promote EBP (Collins-Camargo, 2007); social workers listening to research audio tapes while driving (Hagell & Spencer, 2004); learning labs on clinical decision making for supervisors and managers (Jones, Washington, & Steppes, 2007); online and face-to-face program to facilitate application of research evidence to practice scenarios (LaMendola, Ballantyne, & Daly, 2009); use of an

Table 1: Studies included in the review

Study	Research Question /Focus	Research Design	Intervention	Research Participants	Barriers to EBP identified *See list below
Barratt 2003 UK	Perceived barriers to EBP and how EBP could be promoted	3 stage, iterative 1) Qualitative group discussions 2) Semi-structured telephone interviews 3) Questionnaire comprising 110 statements.	N/A	Senior staff and managers from children and family services connected with RIP (Research in Practice) organisation.	2, 5, 6, 7, 8
Bellamy et al. 2008 Mullen et al. 2009 (same study) USA	How agency-university collaboration might promote and support EBP Specifically, the impact of a training program on understanding and use of EBP and associated barriers.	Qualitative Pre-test (focus group) Intervention (training & process notes) Post-test (focus group	BEST (Bringing Evidence for Social Work Training). 10 modules on EBP professional practice model. Team approach to examination of practice issue, in partnership with University.	16 social workers from 3 social service agencies working in 3 training groups	1, 2, 3, 4, 5, 6, 7, 9, 10, 11
Booth, Booth, & Falzon 2003 UK	What are practitioners understanding, skills and training in EBP? What interest is there in research and EBP skill development?	Self-report mail questionnaire Semi-structured interviews	NA	social care practitioners in the Trent region 161 survey responses (27% response rate) 27 interviewees	1, 2, 4, 6, 8, 9, 10, 11
Burke & Early 2003 USA	How do practitioners obtain knowledge to inform their interventions?	Qualitative 3 focus groups	NA	26 representatives from Alcohol and Other Drugs (AOD) treatment programs for adolescents.	1, 2, 3, 4, 8, 9
Collins-Camargo 2007	The use of clinical supervision as a way of promoting the skills,	Qualitative 7 focus groups	Structured, professional supervision designed	80 supervisors in Child Welfare services across 4 states	1, 2, 4, 7, 8

USA	critical inquiry and learning environment required for EBP.		to promote EBP		
Hagell & Spencer 2004 UK	Impact of research audiotapes on research knowledge and agency practice	Pre-test & post-test design Pre: 20 item Questionnaire Post: 4 Focus groups Post follow-up (3mths): questionnaire or phone interview	Listen to *Research in Practice* tapes whilst driving	Social care staff in four social services departments. Pre-test: n=29 Post 1: n=25 Post 2: n=20	1, 8
Jones et al. 2007 USA	Use of EBP decision-making tool in supervision as a way of building skills in child protective services	Focus groups Nominal group process to identify top 10 reasons for tool working / not working.	2 part learning lab for supervisors and middle managers over a 3 month period.	29 supervisors 10 middle managers Child Protective services	1, 4, 8
LaMendola, Ballantyne, & Daly 2009 US/UK	How practitioners engage with a community of enquiry approach	Mixed method, single-group Qualitative process data (transcripts of online and face to face discussions) Quantitative post measures (standardised scales to measure learning and satisfaction)	6 month "Community of Enquiry" program: 4 week online induction 19 week online case discussions and application of research findings to case plans. 4 face to face case discussions	6 social work practitioners working with children with disabilities completed the program. Social workers were remotely located in a large, Scottish, rural local authority area.	1, 10
Murphy & McDonald 2004 Australia	Knowledge of, attitudes towards and use of EBP by social workers in comparison to other health professionals .	Mixed method: Questionnaire Individual semi-structured interviews Group interviews	NA	207 questionnaires returned by health practitioners in hospitals across regional, rural & remote sites (62% response rate from 331) Social workers: n=9 50 semi-structured interviews. Social workers: n=6	1, 2, 5, 6, 7, 9, 10

				Group interviews with 5 teams	
Stevens et al. 2005 UK	What are the difficulties and benefits in running a service to promote the use of research evidence in social care practice?	Pilot case study of implementation strategy Descriptive statistics and feedback from participants (questionnaire or phone interview).	WWfC –What Works for Children Implementation Officer works with practitioners in workshops & seminars and prepares research summaries in response to practice questions	10 social care staff from 6 programs for children and young people Paper relates to 46 practice questions generated during a 12 month period	1, 5, 8, 9,
Straussner et al. 2006 USA	Impact of online research dissemination program on supervisors' attitudes toward and ability to perform supervision tasks	Pre-test and post-test design Self-administered Clinical Supervision Questionnaire (CSQ)	SATOL (Substance Abuse Treatment Online Library) 8 week online program containing 25 quality, reviewed articles. Supervisors read, apply & report on use of 1 article per week.	29 Clinical supervisors in ten (10) substance abuse agencies in New York	1, 2, 4, 5, 8, 10

***Barriers to EBP identified in > 1 study:**

1. Time
2. Poor access to research evidence
3. Inadequate funding
4. Inadequate skills of workers
5. Insufficient knowledge and information amongst workers
6. Training needs
7. Poor understanding of EBP
8. Agency culture
9. Available research evidence not relevant to the practice context
10. Negative or indifferent attitudes to EBP amongst workers
11. Inadequate supervision in EBP decision making

implementation officer to work with practitioners to identify practice questions and compile relevant research evidence (Stevens, Liabo, Frost, & Roberts, 2005); and an online library for supervisors (Straussner et al., 2006). Some form of pre- and post-testing was used in 3 of these studies (Bellamy, Bledsoe, Mullen, Fang, & Manuel, 2008; Hagell & Spencer, 2004; Straussner et al., 2006), one study used process and outcome measures (LaMendola et al., 2009), and 3 post-testing only. Questionnaires and focus groups were the main data collection methods used. Table 1 provides further information on the study designs, interventions, population groups, and findings regarding barriers to EBP implementation.

The data collected across all 11 studies were predominately qualitative in nature, with some studies reporting descriptive and inferential statistics from survey data. Only two of the 11 studies attempted some measure, beyond self-reporting, of practitioners' behaviours. This entailed content and frequency analysis of online postings in response to fictitious scenarios in one study (LaMendola et al., 2009) and records of practice questions and associated research evidence generated in another (Stevens et al., 2005).

The included studies did not necessarily describe the methods used and nearly all gave no indication that they had received ethics approval. The sample sizes ranged from 6 to 207 participants and were drawn from diverse human service population groups, including disability, alcohol and other drugs, children's services, local authorities, and rural health. Generally purposive and convenience samples were used. Some studies targeted only managers and supervisors, while others targeted frontline practitioners, and some included both. Some studies recruited only social workers, while others included social workers among a more diverse population of service providers. One study compared social workers' views to those of other disciplines (Murphy & McDonald, 2004).

Barriers to EBP implementation

The thematic analysis of findings from the 11 studies identified common barriers to EBP implementation. Table 2 provides a list of the barriers to EBP implementation found in more than one study and the number of studies identifying that particular barrier. The barriers have been grouped according to the categories identified through the data analysis process described above: agency resources; skills and knowledge needs of practitioners; agency culture; the research environment; attitudes of practitioners; and the nature of supervision. These are discussed in turn below.

Table 2: Barriers to EBP Implementation

Barrier	No. studies identifying barrier /11
INADEQUATE AGENCY RESOURCES DEDICATED TO EBP	11
Time	10
Access to research evidence	7
Funding	2
SKILLS & KNOWLEDGE NEEDS OF PRACTITIONERS	9
Skills	6
Knowledge & information	5
Training needs	4
Poor understanding of EBP	4
AGENCY CULTURE	8
RESEARCH ENVIRONMENT	5
Evidence not relevant to practice	5
ATTITUDES OF PRACTITIONERS	5
Negative or indifferent attitude to EBP	5
NATURE OF SUPERVISION	2

Inadequate agency resources

Inadequate agency resources dedicated to the implementation of EBP was identified as a barrier in all 11 studies. Staff time, infrastructure providing access to research evidence, and funding were the three aspects of agency resources delineated as barriers from the study findings. 'Time' was the most frequently identified barrier, found in 10 of the 11 studies. EBP being regarded as something in which practitioners and managers must engage on top of their normal full workload, without recognition in terms of additional staff time allocations, was the most significant barrier to EBP implementation identified by the review. Seven of the studies identified poor access to available research evidence as a barrier to EBP implementation (Barratt, 2003; Booth et al., 2003; Bellamy et al., 2008; Burke & Early, 2003; Collins-Camargo, 2007; Murphy & McDonald, 2004, Straussner et al., 2006). The need to invest resources in staffed library facilities and information technology to access web-based databases was identified as a requirement if there were to be a movement from EBP as an aspiration to a reality. The benefit to agencies developing such infrastructure is that practitioners are better able to access external evidence databanks, such as SCIE, Cochrane Collaboration, Campbell Collaboration, and resources available from other professional and research organisations. Two studies specifically identified agencies' inadequate allocation of funding to EBP as a barrier to implementation (Bellamy et al., 2008; Burke & Early, 2003).

Skills and knowledge needs of human service professionals

The skills and knowledge needs of human service professionals was the second category of barriers identified, with 9 of the 11 studies identifying inadequate skills, knowledge, training, or understanding of EBP as barriers to implementation. One of the reasons identified for this is that in their qualifying education, social care practitioners are not as well trained as other disciplines in the appraisal of research and its application to practice. One included study is an Australian survey of rural multidisciplinary health teams that found social workers had the

lowest levels of knowledge and application of EBP, which was largely absent from their qualifying training (Murphy & McDonald, 2004). Social work's grounding in interpretive value-based paradigms and resistance to claims to scientific objectivity and authority was also presented as a significant barrier to EBP implementation (Murphy & McDonald, 2004). A lack of clarity and vague definitions of EBP was found to be a barrier in 4 of the studies, and the importance of a common understanding of what constitutes evidence for practice was also emphasised (Barratt, 2003; Bellamy et al., 2008; Collins-Camargo, 2007; Murphy & McDonald, 2004). The specific skills and knowledge found to be lacking related predominantly to the critical appraisal of research, dealing with data, and the transfer of research findings into practice applications, but knowledge and skill in information technology and in supervising staff to work with an EBP approach were also identified as areas for development. Four of the studies specifically addressed the need for ongoing professional development and training to address these gaps in knowledge, skills, and understanding of EBP (Barratt, 2003; Bellamy et al., 2008; Booth et al., 2003; Murphy & McDonald, 2004). A strategic approach to training and skill development at the organisational level was indicated as individual staff members were viewed as already overstretched but lacking in the necessary skills and capacity to use evidence appropriately (Barratt, 2003; Booth et al., 2003; Burke & Early, 2003).

Agency culture

Agency culture was identified as a potential barrier to EBP implementation in 8 of the 11 studies. Specifically, the aspects of agency culture that were seen to hinder an EBP approach were 'blame cultures' that inhibited practitioners from working flexibly outside accepted guidelines and approaches (Barratt, 2003), a lack of critical questioning (Booth et al., 2003), no prior experience in utilising research to inform practice (Burke & Early, 2003; Stevens et al., 2005), punitive, constraining or overly bureaucratic management or administrative

procedures (Collins-Camargo, 2007; Jones et al., 2007; Straussner et al., 2006), and reactive approaches to practice, where evidence that is directly relevant was expected immediately (Hagell & Spencer, 2004).

Research environment

Five studies identified the research environment as a barrier to EBP implementation. Insufficient research evidence in particular practice areas was a concern, as well as a lack of fit between the type of scientific research that is undertaken and the requirements of practitioners working with unique practice contexts and client circumstances (Bellamy et al., 2008; Booth et al., 2003; Burke & Early, 2003; Murphy & McDonald, 2004; Stevens et al., 2005). Stevens et al. (2005) found that quality research studies could not be identified for 60% of the practice questions generated by practitioners, with only 21% of practice questions yielding strong research evidence. They concluded that it was difficult to cultivate a supportive culture of research utilisation in the absence of appropriate published research. Bellamy et al. (2008) also found that participants identified this lack of 'fit' with much of the available research they located not matching the ethnicity and backgrounds of the populations with whom they worked. These studies reported that their EBP intervention, rather than ameliorating concern about research applicability, actually increased it (Manuel et al., 2009).

Practitioner attitudes

The attitudes of practitioners were found to be a barrier to EBP implementation in 5 studies. Suspicion about the trustworthiness of research and the applicability of EBP to a human service context were found to impact on the way in which practitioners engaged with EBP. Almost half of the social workers in Murphy and McDonald's (2004) study viewed EBP negatively. Bellamy et al. (2008) also recorded that respondents were suspicious of EBP, while Booth et al. (2003) found that practitioners did not trust the accuracy and validity of

research findings. Others found a less overt mistrust of EBP, but rather a lack of motivation to engage with EBP or a preference for more experiential forms of knowledge (LaMendola et al., 2009; Straussner et al., 2006).

Lack of supervision in EBP

Two studies identified the lack of EBP supervision as a barrier believing practitioners needed the guidance and support of a supervisor who could assist with identifying relevant research and applying this to the particular circumstances presenting in practice (Bellamy et al., 2008; Booth et al., 2003). Supervision also provides the opportunity for critical reflection on the value and contribution of EBP.

Facilitating EBP implementation

The reviewed studies tended to focus more on identifying barriers than facilitators to EBP implementation. The obvious implication of this being that addressing and overcoming the barriers would lead to better understandings about how to facilitate EBP uptake. In addition, different intervention programs to build EBP capacity through education, supervision, and professional development were described briefly and examined in the 7 intervention studies and some positive outcomes of these interventions were reported. Conclusions drawn on facilitators of EBP implementation by the study authors are largely tentative.

Two intervention studies, in particular, sought to address the time barrier. The ‘What Works for Children’ (WWfC) project provided the assistance of an implementation officer to work directly with busy practitioners to identify practice questions where research evidence could be helpful, conduct searches for relevant research, and disseminate evidence summaries to practitioners (Stevens et al., 2005). Overwhelmingly, the summaries were found to be accessible by participants, but less than half (45%) said that their future delivery of services would be affected by the intervention. The other intervention addressing the time barrier

sought to optimise time use by providing audio recordings of research summaries for practitioners to listen to while driving (Hagell & Spencer, 2004). There was mixed evidence as to whether the tapes facilitated EBP implementation,

Two intervention studies examined the impact of programs for supervisors designed to enhance supervisory competence and the application of research evidence to practice. Both studies relied on self-reporting by supervisors who participated in the programs. Using pre- and post-testing with 29 supervisors in the substance abuse field, Straussner et al. (2006) found a statistically significant improvement in levels of capability to support supervisees, evaluate quality of practice, and apply empirical evidence to practice after exposure to the *Substance Abuse Treatment Online Library*. Both pre- and post-tests, however, indicated that the application of research evidence to practice remained the aspect of supervision in which participants felt least competent. Collins-Comargo (2007) examined qualitative data from focus groups with 80 child welfare supervisors who participated in a structured supervision program and concluded that, with appropriate support from management, the supervision program resulted in a more analytical approach to practice and improved supervisees' application of evidence..

Five studies concluded that EBP implementation required a coordinated, strategic approach to skill development with research application driven and resourced at management level, as individual practitioners were able to implement only a limited amount of evidence (Barratt, 2003; Bellamy et al., 2008; Collins-Comargo2007; Jones et al., 2007; La Mendola et al., 2009). Two studies recognised the potential to enhance EBP through partnerships between human service organisations and universities, by building collaborative research programs and providing professional development for practitioners (Bellamy et al., 2008; Collins-Camargo, 2007).

Discussion and applications to social work

The findings from this review of empirical research literature using explicit definitions and inclusion criteria provide insight into the barriers and facilitators to the implementation of EBP as a clinical decision-making process in the human services. The included studies were undertaken in diverse practice settings, involved the use of a range of research methods, but limited descriptions of the research designs, interventions, and data collection methods made it difficult to appraise the quality of the studies and the validity of findings. The included studies were predominantly qualitative in nature and data collection methods relied almost exclusively on self-reporting by practitioners. The opportunity to pool findings across studies was limited, but a cautious attempt has been made to identify the dominant barriers to EBP implementation.

Interventions designed to promote EBP implementation were also diverse. A range of EBP implementation interventions were described in the included studies but the findings of the review do not proffer any evidence on which approach may be more effective or better suited to a particular practice context than any other. What can be said in general terms is that common factors identified as facilitators of EBP implementation included managerial level support and resources for programs that offer education, access to research evidence, and assistance to practitioners in drawing practice implications from research evidence. Multi-faceted approaches that respond to particular practice contexts and practitioner requirements are likely to be needed.

Within the limitations of the research available, some general trends on the barriers to EBP implementation emerged from this review. While the skills, knowledge, and attitudes of individual practitioners did present as barriers, there were also significant barriers to EBP implementation beyond the control of individual practitioners. The need to approach EBP implementation systemically is apparent as structural barriers relating to the research

environment, agency culture, and allocation of resources to staffing, supervision, library resources, information technology, and training in human service agencies were evident across all of the included studies. This finding suggests that there is a need to avoid seeing EBP implementation as solely the responsibility of practitioners providing direct services to clients. EBP is far more likely in agency contexts where research-based practice is an intricate part of the organisational culture and where adequate networked supports, resources, training, and supervision is available for practitioners. In such contexts, there is usually a ready supply of research and mechanisms exist in the form of treatment protocols or intervention guidelines to assist busy practitioners in translating research into practice.

Conclusion

Our review and appraisal of published empirical research on the barriers to implementing evidence-based practice in the human services yielded 11 studies that defined EBP as a research-informed, clinical decision- making process. It identified several significant barriers and facilitators to EBP implementation. Seven of these studies examined the impact of an intervention designed to promote EBP implementation. A thematic analysis of the findings of the 11 studies produced a list of barriers to EBP implementation grouped in terms of: inadequate agency resources dedicated to EBP; skills and knowledge needs of practitioners; agency culture; the research environment; practitioner attitudes; and inadequate supervision. The identification of barriers, together with findings on the impact of the piloted EBP implementation interventions, suggest that multifaceted approaches to research-intensive capacity building in organisations that are strategically driven by management and resourced adequately are likely to facilitate EBP implementation. These conclusions are, however, offered tentatively given the limited and exploratory nature of the body of available research on the topic. Continued research is required in order to draw stronger conclusions about the effectiveness of particular implementation interventions in specific practice contexts.

Ongoing innovation within organisations to discover new ways to bridge the research-practice divide in the human services is also indicated.

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