

EVIDENCE-BASED PRACTICES IN INTERDISCIPLINARY MENTAL HEALTH

INTERDISCIPLINARY MENTAL HEALTH PROFESSIONALS'
DEFINITION AND IMPLEMENTATION OF EVIDENCE-BASED PRACTICES

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of the Requirements for the Degree Doctor of Philosophy

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Lay Abstract

Evidence-based practice involves using research evidence to make decisions about client treatment. The purpose of this project was to examine how different mental health professionals in the same setting define and implement evidence-based practice. This research was conducted using two online surveys of over two hundred clinicians and face-to-face interviews with eight clinicians. The surveys found that clinicians had an understanding of evidence-based practice and positive opinions about evidence-based practices but saw moderate impact of evidence-based practice and infrequency in searching for research evidence. The research found that reasons for impact included: education, profession, knowledge and attitude. One cause for search infrequency was knowledge. The interviews found that about half defined evidence-based practice as only research evidence and the other half as research evidence, clinician experience and client wishes. The interviews also illuminated the process of putting evidence-based practice into place and some areas of tension. Similarities across all of the research were the importance of knowledge, access to evidence and time to engage in evidence-based practice.

Abstract

Evidence-based practice was originally defined by Sackett et al. (1996) as the use of current research evidence, clinical expertise and client wishes in making clinical decisions. To date, several studies have outlined facilitators and barriers to evidence-based practice implementation in mental health treatment settings. Few have studied evidence-based practice implementation in interdisciplinary mental health treatment settings. This research explored how clinicians working in interdisciplinary mental health treatment settings 1) define evidence-based practice, 2) report on factors influencing evidence-based practice implementation, and 3) perceive the promoters and barriers to evidence-based practice implementation. This research analyzed data from three studies. In the quantitative portion 233 clinicians participated in an online survey. Descriptive results indicated that clinician scores for knowledge (understanding of and confidence in evidence based-practice) and attitude (positive opinion about evidence-based practice) were high. However, descriptive results also indicated that scores for outcome (perceived impact of evidence-based practice) were moderate and scores for behaviour (frequency clinicians access research evidence) were low. Further analysis showed that nearly 50% of evidence-based practice outcome was explained by education, profession, knowledge and attitude, and approximately 15% of clinician behaviour was explained by knowledge. In the qualitative portion 8 clinicians were interviewed. The results showed that half of the clinicians defined evidence-based practice as research evidence and the other half defined it as research evidence with clinical expertise and client preferences. The interviews identified four components essential to evidence-based practice implementation: creating conditions; accessing evidence; motivating

practice; reflecting critically. The interviews also uncovered four tensions clinicians experienced central to evidence-based practice: valuing research evidence vs. clinical expertise; fidelity vs. customization; defining roles vs. role sharing; implementing evidence-based practice vs. managing clinical workload pressures. The findings across the studies highlighted the importance of knowledge, evidence, access and time to optimize evidence-based practice implementation. The results showed that evidence-based practice implementation could be facilitated by a more unified definition, clearer expectations on the part of clinicians and organizations, and a shift in focus from education to behaviour change and monitoring implementation.

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Declaration of Academic Achievement

I, Anthony DiGiacomo conducted all of the research for these papers and this thesis. I am also the primary author of these papers and this thesis. My PhD supervisory committee consisting of Dr. Mary Law, Dr. Joy MacDermid and Dr. Sandra Moll, assisted in planning, supervisory and editing capacities.

Chapter One - Introduction

Sackett, Rosenberg, Gray, Haynes and Richardson (1996) defined evidence-based medicine, and later evidence-based practice, as the use of current best evidence, clinical expertise, and the client's choices in making decisions about the treatment of individual patients. This is often referred to as the three-legged stool definition of evidence-based practice. In his reflections on evidence-based practice Upshur (2005) noted that nearly every aspect of health care “from nursing to mental health care to policy making to humanitarian medical intervention, is striving to become evidence-based”. However, given that different professions also have varying values and standards of practice, implementing evidence-based practices in interdisciplinary treatment situations can prove challenging.

Presently, there is a knowledge gap in the area of defining and implementing evidence-based practice within interdisciplinary mental health treatment settings. The aim of this research is to determine how clinicians working in interdisciplinary mental health treatment settings define and implement evidence-based practice. This research will look at this issue through both quantitative and qualitative inquiry in an attempt to gain a comprehensive understanding of the subject. This research will use a sequential explanatory mixed methods design (Tashakkori and Teddlie, 2003) where data are collected and analyzed sequentially. A large-scale quantitative study takes place first followed by a smaller qualitative study. The data are then integrated during interpretation.

Facilitators of Interdisciplinary Treatment in Health Care

A number of studies have looked at facilitators of interdisciplinary treatment in health care. Studies that reported the facilitators of interdisciplinary treatment in health care highlight assets such as support from organizations and knowledge sharing.

Several facilitators of interdisciplinary treatment in health care stemmed from organizational support and involvement. In a study of the implementation of an interdisciplinary management tool, Nancarrow et al. (2015) found that to achieve success interdisciplinary teams needed to take protected time for reflection and to receive support from administrators to be able to affect change. Goldman et al. (2010) studied interprofessional primary care protocols in Family Health Teams across Ontario. They found that success was dependent on champions, leaders and other organizational factors.

Other benefits of interdisciplinary treatment in health care occurred due to knowledge sharing, education and other knowledge promoting activities. Sibbald et al. (2013) identified specific interventions needed for promotion such as types of communication, knowledge-sharing activities, and actively utilizing allied health professionals. Legare et al. (2011) found the most common promoters of interprofessional treatment to be “education and training in interprofessionalism and shared decision making, motivation to achieve a interprofessional approach to shared decision making, and mutual knowledge and understanding of disciplinary roles”.

Challenges of Interdisciplinary Treatment in Health Care

A number of studies also looked at challenges of interdisciplinary treatment in health care. Studies that reported the challenges of interdisciplinary treatment in health care highlighted issues such as lack of communication and resources.

Some challenges of interdisciplinary treatment in health care occurred due to lack of communication, collaboration or information sharing. Sibbald et al. (2013) looked at knowledge exchange in interdisciplinary primary health care teams. They determined that the sharing of information in interdisciplinary teams was difficult to accomplish due to the complexities of each discipline. They also found that despite the move to interdisciplinary team models, senior physicians continued to make decisions on new evidence and practice changes. Williams et al. (2008) described concerns regarding lack of communication and collaboration among disciplines. Emmons, Viswanath and Colditz (2008) also acknowledged evidence-based advances in research across multiple disciplines in understanding, preventing, and treating chronic illness. Given these advances they questioned why substantial improvements have not been achieved. They explored interdisciplinary collaboration as both the source of public health care difficulties and with effective translation, the solution.

Other challenges of interdisciplinary treatment in health care such as lack of time and role clarity, stemmed from lack of resources. Nancarrow et al. (2015) studied 10 teams with up to 10 different disciplines across England. They identified interdisciplinary team challenges that included limited career progression opportunities, limited use of resources and the need for role clarity. Legare et al. (2011) researched a conceptual model for interprofessional decision-making in health care. They identified the most common barriers to interprofessional treatment as time limitations, poor resources, and an imbalance of power among professionals.

Benefits of Interdisciplinary Treatment in Mental Health

Mental health treatment services are generally delivered in interdisciplinary treatment settings with several clinicians of varying professions and levels of education working with the same clients. Several studies observed the positive impact of interdisciplinary treatment in mental health. Studies that reported the benefits of interdisciplinary treatment in mental health care highlighted increased satisfaction of care, improved outcomes and effective collaboration models.

Several benefits of interdisciplinary treatment in mental health emerged from increased client and clinician satisfaction. In the literature, the terms increased client and clinician satisfaction referred to positive impacts of interdisciplinary mental health treatment that improve client and/or clinician satisfaction with services and treatment enhancement. Rosen and O'Halloran (2014) reported that bringing together several areas of clinical treatment and psychosocial rehabilitation enhanced treatment of individuals with severe and persisting mental illness. McGonnell et al. (2009) surveyed the effectiveness of a best practice and interdisciplinary care models in the treatment of Attention Deficit/Hyperactivity Disorder (ADHD). The results displayed a high level of client and clinician satisfaction. Sharma et al. (2001) reported high patient and practitioner satisfaction with services.

Other benefits of interdisciplinary treatment in mental health come from improved outcomes. In these studies the term "improved outcomes" referred to positive impacts of interdisciplinary mental health treatment that showed treatment improvement in specific symptoms. Barber and Weinberg (2010) studied interdisciplinary evidence-based treatment of borderline personality disorder. Their results denoted a reduction in psychiatric disturbance, depression, suicidality, hospitalizations, and emergency room

visits with increased quality of relationships and quality of life. Druss et al. (2001) found that integrated primary care was linked to improved quality and outcomes. Sharma et al. (2001) also showed a 38% drop in hospitalization as a result of interdisciplinary treatment. Gater et al. (1997) found that multidisciplinary community-based treatment provided improved outcomes at 2 and 4 year follow ups versus hospital-based care.

Some benefits of interdisciplinary treatment in mental health arose from effective collaboration models. Effective collaboration models referred to the positive impacts of interdisciplinary mental health treatment that addressed aspects of interdisciplinary models and which promoted improvements in care through effective interprofessional collaboration. King et al. (2013) investigated interdisciplinary collaboration in Australian mental health treatment. They found that successful interprofessional collaborative networks were influenced by factors such as “clarity and structure of ongoing meetings, individual dynamics and the role of champions”. They added that success of programs was also dependent on strong project design and implementation. McGonnell et al. (2009) also reported positive beliefs about the service model. Scott et al. (2009) outlined the advantages of interdisciplinary, youth specific mental health services in Australia. Their evidence proposed that quality mental health treatment hinged on well-integrated mental health, substance use and general health care clinicians working together.

Challenges of Interdisciplinary Treatment in Mental Health

Though several studies examined the benefits of interdisciplinary treatment in mental health others highlighted challenges. Studies that reported the challenges of interdisciplinary treatment in mental health highlighted fragmentation along professional lines, the lack of or difference in skills and no evidence of outcomes.

Several challenges of interdisciplinary treatment in mental health stemmed from fragmentation along professional lines. Fragmentation along professional lines referred to challenges in interdisciplinary mental health treatment that included difficulty or confusion in clinical practice regarding professional roles. Maddock (2015) looked at multidisciplinary mental health team functioning in mental health treatment in Ireland. Maddock reported that professional role blurring and stereotyping affected the division of labour and that role negotiation was part of maintaining professional identity. Koenig et al. (2013) presented multidisciplinary team perspectives on older adult hoarding. Two of their key findings included the need for research to guide their interventions and team training to discover common viewpoints. Deady (2012) interviewed multidisciplinary clinicians in teams working in acute mental health treatment in Ireland. Results indicated that there was no agreement on structure, formulation, or practice within their multidisciplinary team. Lilas & Turnbull (2009) reviewed interdisciplinary treatment in infant/child mental health and early intervention. They described a lack of interdisciplinary collaboration highlighting themes of “fragmentation, isolation, hierarchy, and specialization”. Fortune and Fitzgerald (2009) explored the challenges of interdisciplinary treatment in acute inpatient mental health. They reported that difficulties between professional groups negatively affected opportunities for inpatients to partake in meaningful work.

Other challenges of interdisciplinary treatment in mental health came from the lack of or difference in skills. A lack of or difference in skills referred to challenges in interdisciplinary mental health treatment that included the need for direction through management, education or professional registration. Wilberforce et al. (2013) studied

interdisciplinary treatment in community mental health for older people in England.

Though interdisciplinary treatment was found to be generally favourable the growth in interprofessional clinicians hired without professional registration raised concerns about relevant skills. Harding and McCrory (2009) proposed that integration has led to models of care from different traditions with different needs, language, goals, and methods.

Some challenges of interdisciplinary treatment in mental health emerged from little to no evidence of outcomes. In this context, little to no evidence of outcomes referred to challenges in interdisciplinary mental health treatment that indicated no change in client treatment outcomes. Mellin (2009) looked at interdisciplinary collaboration in school mental health treatment and concluded that there is little research documenting how interdisciplinary collaboration affected outcomes. Byng et al. (2004) reported no significant differences in patient satisfaction or general health. Swindle et al. (2003) reported no difference at 3- and 12-month follow up and found that the integrated clinicians were not being utilized. Swindle et al. (2003) came to the conclusion that it was challenging to implement these models in actual practice. Bindman et al. (2001) showed that there was no evidence of compensating cost offset or increased rates of treated illness.

Interprofessional Education in Health Care and Mental Health Treatment

Several researchers have proposed interprofessional education (IPE) in order to improve patient treatment and appropriately implement evidence-based practices. Malt (2015) conducted a Cochrane brief review of literature on the effectiveness of interprofessional education. Malt concluded that IPE improved patient treatment outcomes and overall satisfaction, clinician guideline use and adherence to clinical

process. Brennan et al. (2014) evaluated an interprofessional education strategy and emphasized interactive learning. They discovered that interprofessional clinician groups learned from each other's shared observations, and eventually developed a shared work perspective. Abrams (2013) proposed a case for interprofessional education as the future for the education of health care practitioners.

Interprofessional education has also been discussed in the specific area of mental health treatment. Heath et al. (2015) studied interprofessional mental health training in rural care. Their study suggested that IPE in collaborative care improved the chances of effective client care for complex and chronic health concerns. In an editorial on IPE in mental health treatment, Combs et al. (2014) proposed an IPE objective for various professionals to combine their expertise to fortify and expand care options for clients and clinicians. Preist et al. (2008) explored IPE attitudes from collaborative learning in the field of mental health treatment. They found an increase in clarity regarding roles, resources, techniques and how to effectively collaborate in client care.

Evidence-Based Practice and Inter-Professional Context

Recent research has begun to explore the concept of knowledge translation to enhance the use of evidence as context specific. Conklin et al. (2013) suggested that in order to be successful knowledge brokers adapt to the social and technical aspects of each situation to develop relationships and foster change. McCormack et al. (2013) examined how various change interventions functioned in several contexts and explored the relationship between the knowledge translation intervention and context. In exploring difficulties associated with knowledge transfer Ward et al. (2009a) suggested that some models erroneously assumed that the knowledge and the context in which it is to be

implemented are the same thus undermining the complexity of the knowledge translation process. Ward et al. (2009b) also identified a process of context analysis in which knowledge was to be used as one of the areas necessary for a successful knowledge translation process. Jacobson et al. (2003) developed a knowledge translation framework for understanding user context. The PARIHS Framework (Kitson et al., 1998) considered context (alongside evidence and facilitation) as one of its three main elements for enabling the implementation of evidence-based practices. For clinicians working in interdisciplinary mental health treatment, organizational culture, leadership and evaluation have an important role in evidence-based practice implementation.

Evidence-Based Practice Implementation in Mental Health Treatment

Mental health professions such as psychiatry, clinical psychology and nursing were among the first disciplines to use randomized controlled trials, experimental comparisons and meta-analysis to examine treatment effectiveness (NIMH, 1964; Clinical Medical Research Council, 1965; Smith & Glass, 1977). Evidence-based practices have been developed for various areas of mental health treatment including routine mental health (Drake et al., 2001), severe mental illness (Torrey et al., 2001), child and adolescent mental health (Hoagwood et al., 2001) and geriatric mental health (Bartels et al., 2004). Most evidence-based interventions in mental health treatment revolve around pharmacological and/or psychosocial interventions and community-based interdisciplinary treatment teams. Implementation plans for evidence-based practices in mental health treatment include tool kits, web-based resources, training experiences, consultation opportunities, automated reminders and decision support technologies among others.

Several studies have looked at training and support and how they affect the impact of evidence-based practice implementation in mental health treatment. Sandstrom et al. (2014) studied guidelines for psychosocial interventions and concluded that evidence-based practice implementation should always be accompanied by an implementation plan. They concluded that managers and policy-makers should be responsible for supporting implementation. Starin et al. (2014) looked at the implementation of an evidence-informed practice initiative and concluded that the training of community mental health practitioners was moderately successful in client outcomes. Jefford (2013) studied the implementation of evidence-based programs in mental health service systems and stated that setting up and implementing evidence-based practices involved several challenges including funding, staffing and training concerns. Powell et al. (2013) researched clinician motivation to invest in training and discovered that clinicians wanted advanced training and continuing education in evidence-based practices. However, they also found that the time and money the same clinicians were willing to spend fell short of evidence-based practice requirements. They concluded by suggesting high intensity, low cost training. Hovemand and Gillespie (2010) studied evidence-based practices and organizational performance and discovered that organizations that showed the greatest impact from evidence-based practice implementation were also the most organizationally efficient. Aarons et al. (2009) studied the implementation of evidence-based practices in community mental health agencies and found evidence-based practice implementation to be a complex, multi-level process that began with support from the administration and policy-making levels.

Promoters of Evidence-Based Practice Implementation in Mental Health Treatment

Several studies have noted promoters of evidence-based practice implementation in mental health treatment. Promoters of evidence-based practice implementation in mental health treatment included clinician attitude and innovation, management supervision and fidelity monitoring, and consultation, coaching and ongoing support.

Some promoters of evidence-based practice implementation in mental health treatment stemmed from clinician attitude and innovation. Clinician attitude and innovation referred to promoters that focus on clinician-centered aspects of evidence-based practice implementation in mental health treatment. Baker-Ericzen et al. (2015) studied clinical decision-making in community children's mental health treatment and found that targeting clinician decision-making was paramount in implementation results. Allen and Armstrong (2014) studied the evidence clinicians require before implementing interventions and suggested that implementation would be improved by utilizing case studies during training. Palmer (2011) studied innovation and organizational support in evidence-based practice implementation and discovered that evidence-based practice implementation was predicted in part by clinician attitude. Palinkas et al. (2008) researched evidence-based practice treatment fidelity. They discovered three factors associated with implementation: 1) time between training and use in protocol; 2) initial clinician engagement; and 3) clinician/treatment fit.

Other promoters of evidence-based practice implementation in mental health treatment arose from management supervision and fidelity monitoring. Management supervision and fidelity monitoring referred to promoters that focused on management-centered aspects of evidence-based practice implementation in mental health treatment. Fearing et al. (2014) researched clinical transformation from an administrative

perspective and stated that close management and oversight is the key to evidence-based practice implementation with practice leads and coaches as useful implementation strategies. Novins et al. (2013) studied the poor implementation of evidence-based practices. They found that fidelity monitoring and supervision showed the greatest success. Smaller but significant outcomes were found with improving organizational culture. Williams et al. (2013) researched worker-motivation and worker-autonomy in the implementation of imposed evidence-based practice workplace changes. They concluded that the results apply in situations where clinicians were not volunteers in a required practice change. Carlson et al. (2012) explored supervisor behaviours that led to successful evidence-based practice implementation. Important supervisory behaviours identified were skill building, monitoring outcomes and quality improvement.

Other promoters of evidence-based practice implementation in mental health treatment came from consultation, coaching and ongoing support. Consultation, coaching and ongoing support referred to promoters that focused on consultative aspects of evidence-based practice implementation in mental health treatment. Edmunds et al. (2013) looked at training and consultation as implementation strategies and discovered that although training clinicians in evidence-based practice was often the most utilized method of implementation, a more promising strategy was combining the training with consultation and ongoing support. Similarly, Nadeem et al. (2013)¹ stated that a one-time training was an ineffective method of evidence-based practice implementation and that combined with coaching and consultation was central to uptake and implementation. Nadeem et al (2013)² continued by looking at the content of evidence-based practice implementation consultation calls with clinicians. They found that half of the

consultation time was used for clinically relevant topics, and the other half for administration concerns. Palmer (2011) also found that attitudes were predicted by workplace support for innovation and clinician innovation.

Barriers to Evidence-Based Practice Implementation in Mental Health Treatment

Though studies have noted promoters of evidence-based practice implementation in mental health treatment, others have acknowledged the barriers. Barriers to evidence-based practice implementation in mental health treatment included clinician attitude and beliefs, logistical, workload and productivity concerns, and poor organizational support, supervision and training.

Some barriers to evidence-based practice implementation in mental health treatment stemmed from clinician attitudes and beliefs. These barriers focused on clinician-centered facets of evidence-based practice implementation in mental health treatment. Connors et al. (2015) looked at evidence-based assessment in schools and discovered that clinician level of experience was inversely related to attitude toward evidence-based practice. Himelhoch et al. (2014) looked at an evidence-based smoking cessation protocol for people with mental illness and found that a major barrier to implementation was the clinician belief that clients were not interested in the intervention. Gaudiano et al. (2011) studied intuition and clinician attitude toward evidence-based practices. They found that the barriers to implementation included a focus on education based interventions and clinician reliance on intuition.

Other barriers to evidence-based practice implementation in mental health treatment arose from logistical, workload and productivity concerns. These barriers focused on complex management of several work related facets of evidence-based

practice implementation in mental health treatment. Weist et al. (2014) studied the implementation of evidence-based practices in schools. They found that logistical and methodological challenges were the greatest barrier to implementation. Stirman et al. (2013) studied factors influencing evidence-based psychological treatment implementation. They identified barriers as concerns around workload and productivity.

Still other barriers to evidence-based practice implementation in mental health treatment stemmed from poor organizational support, supervision and training. These barriers focused on organization-centered facets of evidence-based practice implementation in mental health treatment. Stanhope et al. (2011) looked at the implementation of evidence-based practices among mental health services workers and found various barriers including poor agency participation and support, inadequate training of clinicians, and poor supervision. Uppal et al. (2010) studied transfer of training and implications for evidence-based service provision. They found that the most frequently cited barrier to implementation were institutional constraints. Azocar et al. (2003) studied adherence to practice guidelines and found that there was no adherence to guidelines although there was significant clinician report of adherence.

Clinician Perceived Facilitators of Evidence-Based Practice in Mental Health

Treatment

Several studies explored clinician perceived facilitators of evidence-based practice in mental health treatment. Clinician perceived facilitators of evidence-based practice implementation in mental health treatment included clinicians-centred facilitators, organization-centred facilitators and training-centred facilitators.

Several clinician perceived facilitators of evidence-based practice in mental health treatment were clinician-centred. These facilitators focused on clinician-based explanations for evidence-based practice implementation. Allen and Armstrong (2014) concluded that positive clinician attitude toward evidence-based practice predicted a preference for clinical trials. Najavitis et al. (2011) studied clinician views of evidence-based practices for PTSD and substance abuse. They found that the more clinicians used an evidence-based model in practice the more helpful they found it. Palmer (2011) researched mental health clinician experiences of implementing evidence-based practice. Palmer found that attitudes and mandated use of evidence-based practices lead to implementation. Palmer also discovered that attitudes were predicted by organizational support for clinician innovation.

Other clinician perceived facilitators of evidence-based practice in mental health treatment were organization-centred. These facilitators focused on organization-based explanations for evidence-based practice implementation. Hamm et al. (2014) investigated the perspectives of community mental health clinicians and administrators. They discovered participants felt that facilitators to evidence-based practice implementation included support from supervisors and peers, decreased workload requirements, and compensation for time spent learning. Herschell et al. (2014) studied the perspectives of community-based clinicians regarding their training needs for evidence-based practices. They observed specific themes including ongoing support from trainers, agencies, supervisors and peers. Powell et al. (2013) investigated clinician experiences in implementing evidence-based practices. They discovered that facilitators included organizational commitment, appropriate funding, training and ongoing support,

and fidelity monitoring. Aarons et al. (2012) researched clinician attitudes toward evidence-based practice. They learned that positive clinician attitudes toward evidence-based practices were found in efficient, engaged and less stressful organizations. Aarons (2006) investigated types of leadership and their association with clinician attitudes toward evidence-based practices. He discovered that transformational and transactional leadership were positively associated with clinicians' positive attitude about evidence-based practice.

Some clinician perceived facilitators of evidence-based practice in mental health treatment were training-centred. Training-centred facilitators referred to those that focused on training-based explanations for evidence-based practice implementation. Bearman et al. (2015) studied changing clinician attitudes toward evidence-based practices. They found that preparation and training of doctoral students in the form of pre-practicum training improved clinician attitude toward evidence-based practices. Allen and Armstrong (2014) researched clinician attitude regarding evidence-based practice implementation in children and adolescent mental health treatment. They found that case studies and clinical trials were the most preferred types of evidence. Herschell et al. (2014) also found that participants preferred interactive training methods instead of lecture-based methods, and the structure of training methods with an awareness of clinician time constraints.

Clinician Perceived Barriers to Evidence-Based Practice in Mental Health

Treatment

Though studies have explored clinician perceived facilitators of evidence-based practice in mental health treatment others have focused on clinician perceived barriers to

evidence-based practice implementation in mental health treatment. These barriers included clinician experience and clinician belief, time and workload constraints, and access to evidence.

Several perceived barriers to evidence-based practice implementation in mental health treatment stem from personal and professional clinician beliefs and experiences. Connors et al. (2015) studied community-based clinicians working in school mental health treatment. They discovered that clinician level of experience was inversely related to overall attitude toward evidence-based practice. Barnett et al. (2014) reported on specific clinician beliefs and behaviours that deterred evidence-based practice implementation. Gallo and Barlow (2012) investigated factors involved in clinician adoption of evidence-based practices in mental health treatment. They found barriers in clinician predisposition to adopt innovations even within supportive organizations. Ashcroft et al. (2011) looked at clinician attitudes toward evidence-based treatments and discovered that clinician beliefs in negative outcomes of evidence-based treatments were associated with low clinician openness to new treatments and beliefs that evidence-based treatments did not produce a positive outcome. Gaudiano et al. (2011) studied differences in evidence-based practice attitudes of psychotherapists and discovered that clinicians who relied on intuition were associated with negative attitudes toward research, decreased openness to researched-based treatments, and decreased willingness to use evidence-based treatment. Hetrick et al. (2011) researched clinician attitudes regarding guideline recommendations for the treatment of depression in youth. They found the key clinician-level barriers were clinician beliefs that the guidelines were not relevant, that

there was little actual evidence to guide their practice, and that the severity and complexity of the client population made the implementation of guidelines difficult.

Other perceived barriers to evidence-based practice implementation in mental health treatment revolved around time and workload constraints. Hamm et al. (2015) investigated the perspectives of community mental health clinicians and administrators. They discovered that participant identified barriers to evidence-based practice implementation included client no-shows, difficulties in implementation from training to practice, and time or workload constraints. Weist et al. (2014) studied the implementation of evidence-based practices in schools. They looked at clinician attitude and behaviour change and found that logistical and methodological challenges were the greatest barrier to implementation.

Another perceived barrier to evidence-based practice implementation in mental health treatment was access to evidence. Connors et al. (2015) also found that clinicians did not feel as though they had access to resources they liked or needed. Barnett et al. (2014) researched clinician perspectives on evidence-based practices for PTSD. They concluded that the major clinician perceived barrier to evidence-based practice implementation was limited access to evidence-based practices.

Though there is currently much evidence to support effective mental health interventions, little change has been seen through improved mental health outcomes for various mental health populations (Fixsen et al., 2005; Drake et al., 2001; Torrey et al., 2001). There is a gap between evidence-based research findings and changes in practice and outcomes in mental health treatment. Knowledge may have increased but that has

not led to an increase in evidence-based practice implementation. The goal of the research reported in this thesis is to address this knowledge gap.

In summary, the purpose of this research is to examine how interdisciplinary mental health treatment professionals define and implement evidence-based practices. This research will take place over the course of three studies using both quantitative and qualitative methods. This research explores how clinicians working in interdisciplinary mental health treatment 1) define evidence-based practice, 2) report on factors influencing the implementation of evidence-based practices, and 3) perceive the promoters of and barriers to evidence-based practice implementation. Factors that explain the implementation of evidence-based practices will also be examined. As well, the experiences of clinicians with evidence-based practice will be explored through respondent interviews. For the purpose of this thesis, the term interdisciplinary mental health treatment setting refers to a clinical setting in which clients receive mental health treatment interventions from clinicians of different disciplines working in the same setting and at times the same client.

Chapter Two

Interdisciplinary Mental Health Professionals' Definition and Implementation of Evidence-Based Practices: A Descriptive Analysis

Abstract

Implementing evidence-based practices in interdisciplinary treatment situations can prove challenging. This study explored how clinicians working in interdisciplinary mental health treatment settings 1) reported on specific evidence-based practice related domains, 2) defined evidence-based practice, and 3) knew of the evidence-based practices used with their clinical population in their discipline. Two hundred and thirty three (233) clinicians working in interdisciplinary mental health treatment settings across Ontario responded to an online survey. According to the results of the KABQm, respondents reported that scores for knowledge (understanding of and confidence in evidence based-practice) and attitude (positive opinion about evidence-based practice) were high. However, scores for outcome (perceived impact of evidence-based practice) were moderate and scores for behaviour (frequency clinicians access research evidence) were low. Clinicians with higher levels of education reported higher scores across all domains. There were no differences in domain scores by profession. According to the results for the EBP-IWCS respondents moderately agreed with the three-legged stool definition of evidence-based practice by Sackett et al. (1996). They also moderately agreed that they knew, implemented and saw the effectiveness of their own evidence-based practices, and somewhat agreed that their co-workers did the same. They somewhat agreed in the workplace support of their evidence-based practices.

Evidence-based practice was defined as the use of current best evidence, clinical expertise, and the patient's choices in making decisions about the treatment of individual patients (Sackett et al., 1997). Upshur (2005) noted that nearly every aspect of health care is attempting to become evidence-based. However, given that ideas around evidence-based practice might differ between professions and that different professions might also have varying values and standards of practice, implementing evidence-based practices in interdisciplinary treatment situations can prove challenging.

Evidence about Interdisciplinary Mental Health Treatment

Several studies have observed the positive impact of interdisciplinary teams in mental health treatment. Rosen and O'Halloran (2014) reported that bringing together several areas of clinical treatment and psychosocial rehabilitation enhanced treatment of individuals with severe and persisting mental illness. King et al. (2013) investigated interdisciplinary collaboration in Australian mental health treatment. They found that successful interprofessional collaborative networks were influenced by factors such as structure, individual dynamics and the role of champions. They added that success of programs was also dependent on strong project design and implementation. Barber and Weinberg (2010) studied interdisciplinary evidence-based treatment of borderline personality disorder. Their results reported a reduction in psychiatric disturbance, depression, suicidality, hospitalizations, and emergency room visits, with increases in quality of relationships and quality of life.

Though several studies examined the benefits of interdisciplinary mental health treatment others highlighted challenges. In a study on multidisciplinary mental health treatment team functioning, Maddock (2015) reported on concerns such as professional

role blurring, division of labour, and maintaining professional identity. In a study on multidisciplinary team perspectives Koenig et al. (2013) found the need for research to guide their interventions and team training to discover common viewpoints. Wilberforce et al. (2013) studied interdisciplinary community mental health treatment and found a growth in interprofessional staff hired but only moderate growth in interprofessional staff hired with graduate degrees. The growth in interprofessional clinicians hired without professional registration raised concerns about relevant skills.

In general, studies that reported the benefits of interdisciplinary mental health treatment highlighted treatment enhancement, improved outcomes and effective collaboration models. Studies that reported the challenges of interdisciplinary mental health treatment highlighted role confusion, the need for guidance and fragmentation along professional lines.

Evidence-Based Practice Implementation in Mental Health Treatment

In research on community children's mental health treatment, Baker-Ericzen et al. (2015) examined clinical decision-making and found that a key factor in implementation is targeting clinician decision-making. Allen and Armstrong (2014) found that utilizing case studies during training improved implementation. In research on clinical transformation from an administrative perspective, Fearing et al. (2014) found close management and oversight to be key to evidence-based practice implementation. In addition, they reported practice leads and coaches as useful implementation strategies.

Connors et al. (2015) discovered that clinician level of experience was conversely related to clinician attitude toward evidence-based practice. In a study on clinician attitude and behaviour change, Weist et al. (2014) found the greatest barrier to

implementation to be logistical and methodological challenges. Himelhoch et al. (2014) found that clinician belief that clients were not interested in the intervention was a major barrier to implementation.

In general, studies that report the benefits of evidence-based practice implementation in mental health treatment highlighted clinical decision-making, access of research evidence and organizational support. Studies that reported the challenges highlight logistical, workload and productivity concerns, and poor organizational support.

Though there is currently much evidence to support effective mental health treatment interventions little change has been seen through improved outcomes for various mental health populations (Fixsen et al., 2005; Drake et al., 2001; Torrey et al., 2001). In summary, this research will examine how interdisciplinary mental health treatment professionals define and implement evidence-based practices. This study will describe the extent to which clinicians working in interdisciplinary mental health treatment 1) report on specific evidence-based practice related domains, 2) define evidence-based practice, and 3) perceive that evidence-based practice is being used in their clinical setting.

Methods

Participants

The participants who took part in this study were recruited from interdisciplinary mental health treatment organizations in Ontario, Canada. The three organizations used for recruitment were: Canadian Mental Health Association-Ontario (CMHA-ON), Early Intervention in Psychosis Ontario Network (EPION), and Ontario ACT [Assertive Community Treatment] Association (OAA). As such, this was a closed survey. All

participants provided survey responses voluntarily with no remuneration. Informed consent was obtained from all participants. The survey was presented to approximately 1,500 clinicians and three hundred and one (301) participants responded to the survey. Of the three hundred and one (301) participants who responded to the survey, two hundred and thirty six (236) participants completed the survey (completion rate of 78.4%; average completion time of 14 minutes 27 seconds). Though completed, three additional survey responses were removed as the participants stated that they did not want to take part in the study. Only completed surveys were analyzed. The final number of participants was 233. The sample was a convenience sample. The data was collected between April 2015 and June 2015.

Materials

The online survey consisted of two separate questionnaires. The first questionnaire was the Evidence-Based Practices Knowledge, Attitudes and Behaviours Questionnaire-modified [KABQm] (Johnston et al., 2003 modified by Shi et al., 2014). This survey uses 27 items across four domains (knowledge, attitude, outcome, behaviour) to measure evidence-based practice across multiple professions. The KABQm has excellent internal consistency ($\alpha = 0.85$); no floor/ceiling effects and good evidence of construct validity (Shi et al., 2014). In the original KAB administered to clinicians working in pain treatment, the entire questionnaire as well as each domain scored high construct validity ($\alpha = > 0.7$ for each). There were no significant correlations between the four domains, and overall questionnaire responsiveness was satisfactory. Though there are no norms for the KABQm, for the purposes of this study mean scores were operationalized as: 100%-75% = high; 74%-50% = moderate; 49%-0% = low. The

KABQm was used in this study because of its strong validation as a tool measuring important elements of evidence-based practice with various clinician populations.

The authors developed the second questionnaire used in this study. This questionnaire is titled the Evidence-Based Practice Interdisciplinary Workplace Culture Survey (EBP-IWCS). It is a 12 item 7-point Likert scale survey designed to inquire about clinicians' perceptions about their definition of evidence-based practice, their own professional evidence-based practices, their perceptions about the evidence-based practices of the other professions in their workplace, and their perception of workplace support regarding evidence-based practices. The items are inversely scored. Though there are no norms for the EBP-IWCS, for the purposes of this study mean scores will be operationalized as: 1-2 = high; 3-5 = moderate; 6-7 = low. The EBP-IWCS was used in this study to complement the KABQm regarding definition of evidence-based practice but also to inquire specifically about clinicians' perceived knowledge of evidence-based practices, their perceived knowledge of their peers and their perception of organizational support.

Procedure

This study used a cross-sectional design and was approved by the Hamilton Integrated Research Ethics Board (HiREB). The primary author sent emails of enquiry to the three major organizations (CMHA-ON; EPION; OAA). Once approved by the organization the primary author was given contact information for an individual within each organization who would distribute the survey. The primary author provided each organizational contact person with an email containing a web link to the online survey. This email was to be distributed to staff to voluntarily participate in the survey. The

survey was only available online. The primary author then contacted each organizational contact person twice, at monthly intervals after an initial email was sent requesting reminders be sent to potential participants.

Participants were asked to provide their informed consent to participate in the survey. Participants were informed of the purpose of the study, length of time of the survey, where and how long the data were to be stored, and of the primary author of the study. No personal information was collected. Participants were then asked to respond to a series of demographic questions and the two questionnaires. The usability and functionality of the questionnaire was tested on a sample of ten clinicians before the implementation of the survey.

The online surveys used in this study were developed using and administered through FluidSurveys (Fluidware, Ottawa, ON). Responses were captured and compiled automatically into a database. Adaptive questioning was not used. There were 54 items in total. The number of items per page varied based on the portion of the questionnaire. No cookies were used to identify participant computer. There was no IP check or log file analysis. Participants did not need to log in or register for the survey. The Checklist for Reporting Results of Internet E-Surveys [CHERRIES] (Eysenbach, 2004) was used to guide the reporting of Participants, Materials and Procedures.

Analysis

Descriptive statistics such as counts, percentages, means, standard deviations, minimums and maximums were calculated. In addition, analyses of variance (ANOVA) with Bonferonni analyses were conducted to compare KABQm scores by education and profession. Where ANOVAs and Bonferonni analyses could not be conducted due to

unmet assumptions, their non-parametric counterparts Kruskal-Wallis rank sum test and Wilcoxon rank sum test, were conducted. Microsoft Excel 2011 for Mac was used for descriptive statistics. STATA/IC 12.1 for Mac was used for parametric and non-parametric comparative analysis.

Results

In total, 233 participants completed the survey (Table 1). The majority of respondents were female, worked with adults and held a bachelor or masters degree. Sixty three percent (148) were a member of a regulated health profession; the remaining 37% (85) were not members of a regulated health profession. Survey respondents represented a wide range of disciplines and years in mental health practice. Six participants described their education as “other”. Information was collected regarding access to evidence-based practice resources. While 97% had access to a computer and the Internet in their clinical setting, only 59% had access to a library and 57% had access to full text articles. Twenty percent of the clinical settings were affiliated with a university. There were respondents from all 14 Local Health Integration Networks [LHIN].

The knowledge subscale of the KABQm measures confidence in, perceived importance and understanding of evidence-based practice. The mean knowledge score of 81.8 (out of 100) (See Table 2) indicates that respondents generally agree in the importance of and have confidence in evidence-based practice. Respondents were confident in their ability to use evidence-based practice and recognized the importance of patient preferences as well as evidence. The items with the lowest mean scores focused

on the importance of searching bibliographic databases and critically appraising research papers.

The attitude subscale measures respondent opinions of evidence-based practice (See Tables 3 and 4). The mean attitude score of 70.9 (out of 100) indicates that respondents have a generally positive opinion of evidence-based practice. Respondents scored that they were confident that evidence-based practice should be part of clinical practice and that they use evidence-based practice because it improves patient outcomes and because they believe in it. Items with the lowest mean scores focused on the ease of finding the research, using evidence-based practice because colleagues do, and that it is difficult to change. Item B27 is the statement “I don’t use evidence-based practice for another reason (specify)”. There were twenty-nine responses to this statement including: limited access to support, materials and time, resistance to change and impact on therapeutic relationship/client-centred care.

The outcome subscale measures the perceived impact of evidence-based practice on respondent clinical practice. The mean outcome score of 65.1 (out of 100) (See Table 5) indicates that respondents believe that evidence-based practice has a moderate impact on their own clinical practice. Respondents were confident that evidence-based practices affected clinical decisions and patient outcomes. The item with the lowest mean score focused on whether research evidence changed a clinician’s practice.

The behaviour subscale measures how frequently respondents access information on evidence-based practice. The mean behaviour score of 26.9 (out of 100) (See Table 6) indicates that respondents access information on evidence-based practice less than every month. Respondents reported that they access evidence-in general about every month.

However when asked about how frequently they access evidence from specific resources (journal articles, text books, Cochrane database), mean responses were close to never. Each statement in the behaviour subscale was also provided with the option of answering “other”, where respondents can list a time frame other than those provided as responses. The responses to “other” for these items include: rarely/not often/sporadically/occasionally, when needed/when time allows, every other month/every few months and every 3 months.

The total score was 66 (out of 100) with a range from 46.2 to 89.4, suggesting that overall respondents scored moderately across all domains of evidence-based practice.

KABQm means (out of 100) were also calculated for each of the four domains by education (See Table 7) and profession (See Table 8). One-way analysis of variance (ANOVA) was conducted to determine statistically significant difference between groups (F ratio reported). Where a one-way ANOVA could not be conducted because conditions of data set normality or homogeneity of variance was not met, the non-parametric Kruskal-Wallis rank sum test (H value reported) was conducted. The number of participants for the “Doctorate” category is too low to include in comparisons. The participants in the “Other” category are too heterogeneous to include in comparisons.

There were no statistically significant differences between education and the Knowledge and Attitude domains of the KABQm. For Outcome, there was a statistically significant difference between groups. A Bonferonni analysis was conducted to determine where differences between groups exist. At 95% confidence ($\alpha=0.05$), there is no statistically significant difference between Certificate/Diploma and Bachelor’s degree ($F = 3.9, p = 0.3$), or Bachelor’s degree and Master’s degree ($F = 4.4, p = 0.2$). However,

there is a statistically significant difference between Certificate/Diploma and Master's degree ($F = 8.3, p = 0.0$). Mean scores for Outcome are higher in participants with a Master's degree than participants with a Certificate/Diploma.

For Behaviour, there is a statistically significant difference between groups. Two-sample Wilcoxon rank sum tests were conducted to determine where differences between groups exist. At 95% confidence ($\alpha=0.05$), there is no statistically significant difference between Certificate/Diploma and Bachelor's degree ($z = 0.0, p = 0.9$). However, there is a statistically significant difference between Certificate/Diploma and Master's degree ($z = -2.3, p = 0.0$). Mean scores for Behaviour are higher in participants with a Master's degree than participants with a Certificate/Diploma. In addition, there is a statistically significant difference between Bachelor's degree and Master's degree ($z = -2.2, p = 0.0$). Mean scores for Behaviour are higher in participants with a Master's degree than participants with a Bachelor's degree.

For Total score, there is a statistically significant difference between groups. A Bonferonni analysis was conducted to determine where differences between groups exist. At 95% confidence ($\alpha=0.05$), there is no statistically significant difference between Certificate/Diploma and Bachelor's degree ($F = 1.7, p = 0.7$), or Bachelor's degree and Master's degree ($F = 2.9, p = 0.1$). However, there is a statistically significant difference between Certificate/Diploma and Master's degree ($F = 4.7, p = 0.0$). Mean scores for Total score are higher in participants with a Master's degree than participants with a Certificate/Diploma. There were no statistically significant differences across profession and the domains of the KABQm.

KABQm scores from this study were compared to scores from Shi et al. (2014) (See Table 9). The Shi et al. (2014) research studied multiple disciplines involved in pain management to examine if scores were similar across different health care populations. Scores were very similar across both studies.

Scores by profession from this study were also compared to similar scores from Arumugam et al. (See Table 10). The Arumugam et al. research again studied various professionals involved in pain management. Knowledge, Outcome and Total mean scores were generally similar. There were some differences in Attitude and Behaviour mean scores. There were higher Attitude scores across all professions in DiGiacomo et al. Attitude scores were higher by an average of 15.3 points across professions, with the greatest difference, 22.2 points, in the "Medical Doctor" profession category. There were higher Behaviour scores across all professions in Arumugam et al. Behaviour scores were higher by an average of 9.7 points across all professions, with the greatest difference, 18.1 points, in the "Registered Nurse" category.

On the Evidence-Based Practice Interdisciplinary Workplace Culture Survey (See Table 11), respondents moderately agreed with the three-legged stool definition of evidence-based practice by Sackett et al. (1996). Participants moderately agreed that they know, implement and do see the effectiveness of their own evidence-based practices. Participants somewhat agreed that their co-workers know and implement evidence-based practices. Participants also somewhat saw the effectiveness of evidence-based practices of their interdisciplinary co-workers. Participants also somewhat agreed in the workplace support of their evidence-based practices. Item C12 is the statement "Is there anything else that you would like to add regarding the use of evidence-based practices in

interdisciplinary mental health care treatment settings?”. Responses include: no money, time, or access; evidence-based practices are often the same; creativity and clinical judgment should be given as much weight as research; evidence-based practices should be mandatory for all clinicians; there is differing/contradicting research.

Discussion

Descriptive results indicated that clinician scores for knowledge (understanding of and confidence in evidence based-practice) and attitude (positive attitude regarding evidence-based practice) are high. However, scores for outcome (perceived impact of evidence-based practice) are moderate and scores for behaviour (frequency clinicians access research evidence) are low.

According to the results of the KABQm, survey respondents reported high knowledge scores (understanding of and confidence in evidence based-practice) and moderately high attitude scores (positive opinions about evidence-based practice). These findings are consistent with the literature regarding the strengths of interdisciplinary mental health treatment, including a belief in enhanced treatment, clarity, structure and high levels of clinician satisfaction (Rosen and O’Hallaran, 2014; King et al., 2013; McGonnel et al., 2009; Scott et al., 2009). This finding is important because it shows that the clinicians’ most significant understanding of evidence-based practice lies in the knowledge and attitude components. One potential reason is that clinicians have heard the term evidence-based practice as synonymous with improved outcomes, and from administrators and management as preferred models of care.

In contrast, respondents reported moderate outcome (perceived impact of evidence-based practice) and low behaviour (frequency clinicians access research

evidence). This finding is also consistent with the literature regarding the challenges of interdisciplinary mental health treatment which include better training and guidance to impact outcomes, structure and practice (Koenig et al., 2013; Deady, 2012; Mellin, 2009; Byng, 2004). Though clinicians have reported that they feel they know and are positive about evidence-based practice they do not follow through to perceived improved outcomes and behaviour change. Potential reasons include the time commitment, training and change in practice required to implement evidence-based practices. In the open-ended responses regarding why participants don't use evidence-based practices, the most common responses were around limited access to time and materials, and resistance to change within the workplace.

Shi et al. (2014) also compared KABQm subscale score means. Their study looked at multiple professions involved in pain management, and they sampled 673 health care professionals. As compared to this study, subscale score means were very similar across the Knowledge, Attitude, Outcome and Total domains. Score means for the Behaviour domain were different between studies but still quite low in both studies. It is notable that the results are similar given that the Shi study included only health care professionals who had higher levels of education than the breadth of education levels in this sample. As well, the evidence pool would be quite different across the client populations these studies.

When the KABQm scores were analyzed by education level, clinicians with more education scored higher in every category. There were statistically significant differences between Certificate/Diploma degrees and Master's degrees across three domains (Outcome, Behaviour and Total). These results suggest that amount of education has an

impact on all areas of evidence-based practice. This finding is important because it can help to explain why clinicians in the same workplace may have different understandings of the concept of evidence-based practice. One possible reason is that health care professional graduates of Certificate/Diploma programs have less overall training time and therefore less time to learn about evidence-based practices. Higher level degrees might cultivate use of research through training on specific skills such as searching literature, critical appraisal or by creating a culture of research use that might not be as present in certificate/diploma programs. These results suggest different potential targets to support implementation of evidence-based practice. Others have suggested that training health care professionals together can enhance role clarity, patient outcomes, effective collaboration, and uptake of evidence-based practices (Heath et al., 2015; Malt, 2015; Brennan et al., 2014; Lyon et al., 2011).

In addition, KABQm scores were analyzed by profession. Though professions associated with higher level of education again scored higher in every category, a range of clinicians including counsellors, nurses, occupational therapists, peer support and social workers had similar scores across domains. In addition, none of the KABQm scores showed any statistically significant difference across professions. This result is consistent with the literature regarding the challenges of interdisciplinary mental health treatment which include division of labour, professional identity, under qualified clinicians without relevant skills, fragmentation, hierarchy, and negative impact on client outcomes (Maddock, 2015; Wilberforce et al., 2013; Lilas and Turnbull, 2009; Fortune and Fitzgerald, 2009). This finding in combination with the previous finding on education, shows that the major domains of evidence-based practice are not impacted by

profession as proposed in this study, but by education. One potential reason for this similarity across professions could be that clinicians in each profession could also have representation from various levels of education (i.e.: the profession of Nursing could have representation from Certificate/Diploma, Bachelor's, and Master's degree levels of education).

Arumugam et al. also compared KABQm score means by profession for a sample of 674 health care professionals involved in pain management. As compared to this study, Knowledge, Outcome, Behaviour and Total scores were generally similar across professions in both studies. Attitude scores across professions were higher in this study as compared to Arumugam et al. Respondents in this study reported more positive opinions about evidence-based practice than in the Arumugam et al. study. Once again, given that study included physicians, nurses, physiotherapists and occupational therapists with higher levels of education than this sample and that the evidence pool was quite different across these studies, it is important to note that the results are similar.

In response to the EBP-IWCS respondents generally agreed that research evidence, clinical expertise and client perspectives are all components of evidence-based practice. Respondents also felt that they knew, implemented and found useful the evidence-based practices for their own discipline and were slightly less certain of the same for other disciplines in their workplace. Finally, respondents somewhat agreed that their workplaces were supportive of evidence-based practices. When asked to add open-ended comments on the use of evidence-based practices in interdisciplinary mental health treatment settings a majority of respondents said that there was no money, time or access to evidence-based practice resources in their workplace.

There are some interesting observations in comparing the results of the KABQm and the IWCS. The KABQm is heavily geared toward the use of research evidence. In addition all of the KABQm questions regarding behavior change ask about frequency of research evidence related resource access. However there are some statements that touch upon the Sackett three-legged stool model of evidence-based practice. Statement B5 is positively worded and states that research evidence is equal to patient preferences with a very positive response (average = 6.2 out of 7). All statements regarding clinical experience (B15, B18 and B19) are negatively worded and receive neutral responses (average = 4.6, 4.8 and 4.5 out of 7, respectively). However, in the IWCS the first three statements are positively worded statements about all three aspects of the Sackett three-legged stool, research evidence, clinical expertise and client perspectives respectively. All three statements received positive responses (“moderately agree”). When given the opportunity in the EBP-IWCS participants responded positively regarding all aspects of the Sackett three-legged stool definition of evidence-based practice. The KABQm is heavily weighted toward the research evidence aspect of evidence-based practice and rarely touches on the clinical expertise and client preferences aspects of evidence-based practices.

These findings related to evidence-based practice definitions could lead to organizations putting fidelity measures in place in order to ensure that claims of evidence-based practice implementation are valid. Organizations and clinicians should not use the term evidence-based practice to describe their services if they are in fact not providing evidence-based practice. Therefore, they could also lead to organizations reconsidering the use of the term evidence-based practice to describe their services.

Finally, the results regarding challenges in evidence-based practice related behaviour change could lead to organizations allotting appropriate resources to support not only the education and promotion of evidence-based practices but also their implementation, update and continued practice.

Limitations

One limitation of this study is the scope of clinicians surveyed. This study focused on interdisciplinary mental health clinicians working in outpatient community mental health treatment in Ontario, Canada. Future research could expand to interdisciplinary mental health clinicians working in inpatient settings and anywhere outside Ontario, Canada. Another limitation of this study is the number of respondents. Though it was difficult to calculate the exact number of interdisciplinary mental health clinicians working in outpatient community settings in Ontario, Canada, a larger sample would lead to more responses and a lower margin of error. Future research could include a longer sampling period to receive more responses or a more assertive solicitation of participants. Male clinicians and clinicians with a doctoral level education were not represented in significant numbers in this study. In addition peer support workers, psychologists and psychiatrists were also not represented in significant numbers in this study. A third limitation of the study was the use of a non-validated survey. While the KABQM does have some validation, the Evidence-Based Practice Interdisciplinary Workplace Culture Survey does not. Future research could include the use of another validated survey or to validate this survey. A study to determine the EBP-IWCS' data internal consistency, construct validity and overall responsiveness is recommended.

Conclusion

This study described the extent to which disciplines working in interdisciplinary mental health treatment 1) report on specific evidence-based practice related domains, 2) define evidence-based practice, and 3) perceive that evidence-based practice is being used in their clinical setting. The results suggest that the respondents define evidence-based practice as research evidence, clinical expertise and client preferences. Though respondents have high knowledge scores and attitude scores regarding evidence-based practice, their outcome scores are moderate, and behaviour scores are low. This conclusion is important in that considerable resources are focused on education. These results suggest that knowledge and attitude is already where strengths lie and that perhaps more resources should be focused on outcome and behaviour change.

Table 1

Participant Demographics

	Total	Percentage
	233	
A1. Gender		
Female	191	81.9%
Male	41	17.6%
Other	1	0.4%
A2. Age		
18-24	8	3.4%
25-34	70	30%
35-44	57	24.5%
45-54	61	26.2%
55-64	35	16.3%
65 +	2	0.9%
A3. Education		
Certificate/Diploma	65	27.9%
Bachelor's Degree	77	33.1%
Master's Degree	80	34.3%
Doctorate	5	2.2%
Other	6	2.6%
A4. Profession		
Counsellor	16	6.9%

Nurse	52	22.3%
Occupational Therapist	18	7.7%
Peer Support	7	3.0%
Psychiatrist	3	1.3%
Psychologist	6	2.6%
Social Worker	76	32.6%
Other	55	23.6%
A6. Years of Practice in Mental Health	(Mean = 12.8)	
< 5	52	22.3%
5-9	57	24.5%
10-14	40	17.2%
15-19	25	10.7%
20-24	22	9.4%
25-29	14	6.0%
30-34	14	6.0%
35-39	5	2.2%
40 +	4	1.7%
A7. Clinical Population	(More than one choice allowed)	
Children	14	
Adolescents	96	
Adults	219	
Older Adults	78	

Other	8	
A8. Clinical Setting		
Assertive Community Treatment	66	28.3%
Community Mental Health	105	45.1%
Early Intervention in Psychosis	51	21.9%
Other	11	4.7%
A9. Community setting		
Rural	76	32.6%
Urban	157	67.4%

EBP Access	Yes	No
A5. Regulated Health Professional	148 (63.5%)	85 (36.5%)
A11. Access to library in clinical setting	138 (59.2%)	95 (40.8%)
A12. Access to computer in clinical setting	227 (97.4%)	6 (2.6%)
A13. Access to internet in clinical setting	229 (98.3%)	4 (1.7%)
A14. Access to full text articles in clinical setting	134 (57.5%)	99 (42.5%)
A15. Clinical setting affiliated with university	47 (20.2%)	186 (79.8%)

A10. Local Health Integration Network (LHIN)	Number of Participants
LHIN 1-Erie St. Clair	8
LHIN 2-South West	19
LHIN 3-Waterloo Wellington	9
LHIN 4-Hamilton Niagara Haldimand Brant	16

LHIN 5-Central West	3
LHIN 6-Mississauga Halton	10
LHIN 7-Toronto Central	15
LHIN 8-Central	12
LHIN 9-Central East	75
LHIN 10-South East	3
LHIN 11-Champlain	16
LHIN 12-North Simcoe Muskoka	9
LHIN 13-North East	25
LHIN 14-North West	13

Table 2

KABQm Knowledge Subscale Items

	Mean	SD	Minimum	Maximum
B1. I am confident in my ability to use evidence-based practice.	6.1	0.9	2	7
B2. Using evidence-based practice increases the certainty that the selected treatment will be effective.	6.1	0.8	3	7
B3. It is important for me to search bibliographic databases to be an effective clinician.	5.2	1.3	1	7
B4. It is important for me to critically	5.0	1.5	1	7

appraise research papers to be an effective clinician.				
B5. Evidence and patient preferences are equally important in making clinical decisions.	6.1	1.2	1	7
Knowledge subtotal score (K)	28.6	3.8	17	35
Knowledge (out of 100)	81.8	10.9	48.6	100

Table 3

KABQm Attitude Subscale Items (Ascending)

	Mean	SD	Minimum	Maximum
B14. How much confidence do you have in your clinical decision-making?	4.3	0.6	1	5
B16. It is easy to find the research.	4.6	1.6	1	7
B20. Evidence-based practice should be an integral part of clinical practice.	6.0	0.9	3	7
B21. From my personal observation and experience, evidence-based practice is being used by my colleagues.	5.1	1.3	1	7
B22. I use evidence-based practice because it improves patient outcomes.	5.7	0.9	3	7
B23. I use evidence-based practice because I believe in it.	5.7	1.1	2	7

B24. I use evidence-based practice because my colleagues do.	3.8	1.6	1	7
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Table 4

KABQM Attitude Subscale Items (Descending and Total Scores)

	Mean	SD	Minimum	Maximum
B15. Evidence-based practice is a 'cook-book' approach that disregards clinical experience.	4.6	1.5	1	7
B17. Evidence-based practice takes too much time.	4.5	1.6	1	7
B18. Evidence-based practice ignores the 'art' of clinical practice.	4.8	1.4	1	7
B19. Previous clinical experience is more important than research findings in choosing the best treatment available for a patient.	4.5	1.1	2	7
B25. I don't use evidence-based practice because I don't have time.	5.2	1.6	1	7
B26. I don't use evidence-based practice because it is difficult to change.	5.6	1.4	1	7
Attitude subtotal score (A)	64.6	9.3	41	87
Attitude (out of 100)	70.9	10.2	45.1	95.6

Table 5

KABQm Outcome Subscale Items

	Mean	SD	Minimum	Maximum
B11. How much has the use of evidence-based practice affected your clinical decisions?	4.1	1.1	1	6
B12. How much has the use of evidence-based practice affected your patient outcomes?	3.9	1.0	1	6
B13. How often does new research evidence result in a change in your practice?	3.6	1.0	1	6
Outcome subtotal score (O)	11.7	2.6	3	18
Outcome (out of 100)	65.1	14.6	16.7	100

Table 6

KABQm Behavior Subscale Items

	Mean	SD	Minimum	Maximum
B6. How frequently do you access clinical research evidence <i>in general</i> ?	1.9	1.2	0	5
B7. How frequently to you access clinical research evidence <i>from a text book</i> ?	1.3	0.9	0	5

B8. How frequently do you access clinical research evidence <i>from original research papers?</i>	1.3	1.1	0	5
B9. How frequently do you access clinical research evidence <i>from the Cochrane database?</i>	1.0	0.6	0	5
B10. How frequently do you access clinical research evidence <i>from secondary sources such as ACP Journal Club, the journal Evidence-Based Medicine, POEMs (Patient-oriented evidence that matters) or CATs (Critically appraised topics)?</i>	1.2	0.8	0	5
Behaviour subtotal score (B)	6.7	3.3	0	23
Behaviour (out of 100)	26.9	13.2	0	92

Table 7

KABQm Comparisons by Education

	Knowledge mean (SD)	Attitude mean (SD)	Outcome mean (SD)	Behaviour mean (SD)	Total mean (SD)
Certificate/Diploma (n=65)	79.0 (11.2)	69.1 (10.4)	60.4 (15.8)	24.1 (10.5)	63.6 (8.0)

Bachelor's (n=77)	81.9 (10.1)	70.2 (9.7)	64.4 (13.6)	24.7 (11.6)	65.3 (8.1)
Master's (n=80)	83.2 (11.2)	73.0 (10.5)	68.8 (13.9)	29.7 (14.7)	68.2 (8.9)
Doctorate (n=5) ^a	94.3 (3.5)	76.7 (7.4)	75.6 (8.4)	48 (13.9)	76.0 (6.1)
Other (n=6) ^b	82.9 (8.5)	68.1 (6.8)	68.5 (13.9)	31.3 (17.4)	65.8 (6.4)
	<i>H</i> = 5.6	<i>F</i> = 2.9	<i>F</i> = 6.1	<i>H</i> = 6.9	<i>F</i> = 5.9
	<i>p</i> = 0.1	<i>p</i> = 0.1	<i>p</i> = 0.003*	<i>p</i> = 0.03*	<i>p</i> = 0.003*

^a = Numbers are too low to include in comparative analysis; ^b = Other categories are too heterogeneous to include in comparative analysis; * = Statistically significant difference (95% confidence or $\alpha=0.05$)

Table 8

KABQm Comparisons by Profession

	Knowledge mean (SD)	Attitude mean (SD)	Outcome mean (SD)	Behaviour mean (SD)	Total mean (SD)
Counsellor (n=16)	81.8 (11.5)	71.1 (13.2)	68.8 (18.6)	31 (20.7)	67.1 (12.1)
Nurse (n=52)	82.5 (10.9)	71.2 (9.7)	67.3 (15.3)	27.5 (13.1)	66.7 (8.2)
Occupational Therapist (n=18)	85.7 (7.7)	70.9 (8.8)	59.6 (8.3)	28.9 (9.7)	66.5 (6.5)
Peer Support (n=7) ^a	76.3 (12.8)	71.3 (9.0)	56.4 (10.8)	30.3 (11.7)	64.7 (5.3)

Psychiatrist (n=3) ^a	94.3 (4.9)	79.9 (2.3)	74.1 (3.2)	53.3 (11.5)	78.3 (0.3)
Psychologist (n=6) ^a	89.1 (4.9)	71.6 (9.4)	73.2 (10.8)	33.3 (14.9)	69.7 (7.3)
Social Worker (n=76)	80.3 (11.8)	71.2 (10.5)	64.6 (15.1)	26.3 (12.5)	65.7 (9.1)
Other (n=55) ^b	81.3 (10.0)	69.6 (10.3)	64.3 (14.1)	22.8 (10.5)	64.5 (7.8)
	<i>H</i> = 3.7	<i>F</i> = 0.01	<i>F</i> = 1.5	<i>H</i> = 1.5	<i>F</i> = 0.2
	<i>p</i> = 0.3	<i>p</i> = 1.0	<i>p</i> = 0.2	<i>p</i> = 0.7	<i>p</i> = 0.9

^a = Numbers are too low to include in comparative analysis; ^b = Other categories are too heterogeneous to include in comparative analysis; * = Statistically significant difference (95% confidence or $\alpha=0.05$)

Table 9

KABQM Subscale Mean Scores: DiGiacomo et al. vs. Shi et al. (2014)

	DiGiacomo et al.	Shi et al. (2014)
Knowledge mean	81.8	84.5
Attitude mean	70.9	71.0
Outcome mean	65.1	69.8
Behaviour mean	26.9	44.8
Total mean	66.1	69.8

Scores out of 100

Table 10

KABQM Subscale Mean Scores by Profession: DiGiacomo et al. vs. Arumugam et al.

	OT ^a	OT ^b	MD ^a	MD ^b	RN ^a	RN ^b	PSY ^a	PSY ^b
Knowledge	85.7	82.8	94.3	85.6	82.5	86.8	89.1	85.7
mean (SD)	(7.7)	(10.0)	(5.0)	(11.7)	(10.9)	(8.9)	(4.9)	(10.2)
Attitude	70.9	57.9	79.9	57.7	71.2	58.8	71.6	58.1
mean (SD)	(8.8)	(6.1)	(2.3)	(8.1)	(9.7)	(6.2)	(9.4)	(6.5)
Outcome	59.6	65.1	74.1	72.7	67.3	72.0	73.2	70.6
mean (SD)	(8.3)	(14.1)	(3.2)	(14.2)	(15.3)	(13.3)	(10.8)	(13.5)
Behaviour	28.9	36.8	53.3	56.0	27.5	45.6	33.3	43.0
mean (SD)	(9.6)	(14.9)	(11.5)	(15.8)	(13.1)	(17.5)	(14.9)	(17.5)
Total mean	66.5	60.7	78.3	64.8	66.7	64.0	69.7	63.0
(SD)	(6.5)	(5.6)	(0.3)	(6.8)	(8.2)	(5.9)	(7.3)	(5.9)

Scores out of 100; ^a = DiGiacomo et al.; ^b = Arumugam et al.

Table 11

Evidence-Based Practice Interdisciplinary Workplace Culture Survey: Descriptive Statistics

	Mean	SD	Minimum	Maximum
C1. Utilizing research evidence is a component of evidence-based practice.	1.9	1.0	7	1
C2. Utilizing clinical expertise is a component of evidence-based practice.	2.1	1.1	7	1

C3. Utilizing the client's perspectives is a component of evidence-based practice.	2.1	1.2	7	1
C4. I know the evidence-based practices for my discipline with this clinical population.	2.3	1.0	7	1
C5. The evidence-based practices for my discipline with this clinical population are effective.	2.4	0.9	6	1
C6. I use the evidence-based practices for my discipline with this clinical population.	2.3	1.0	6	1
C7. I know the evidence-based practices for other disciplines with this clinical population.	3.5	1.4	7	1
C8. The evidence-based practices for other disciplines with this clinical population are effective.	2.9	1.0	7	1
C9. Other disciplines use the evidence-based practices for their discipline with this clinical population.	2.9	1.2	7	1
C10. My workplace encourages the use of discipline-specific evidence-based practices with this clinical population.	2.8	1.5	7	1
C11. My workplace provides resources (money/time/training) for clinicians to	3.1	1.7	7	1

develop discipline-specific evidence-based practices with this clinical population.				
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Chapter Three

Interdisciplinary Mental Health Professionals' Definition and Implementation of Evidence-Based Practices: An Explanatory Analysis

Abstract

There are both benefits and challenges to implementing evidence-based practices in interdisciplinary mental health treatment. This study determined the extent to which demographic, education and professional factors explained perceived outcome and behaviour change of evidence-based practice. Two hundred and thirty three (233) clinicians working in interdisciplinary mental health treatment settings across Ontario responded to an online survey of demographic information and the Knowledge, Attitude and Behaviour Questionnaire-modified (KABQm). Regression analyses were conducted with Outcome and Behaviour (as measured by the KABQm) as dependent variables. Independent variables were Education, Profession, Years of Practice in Mental Health, Evidence-Based Practice Resource Access, Knowledge (as measured by the KABQm) and Attitude (as measured by the KABQm). Approximately 48% of perceived outcome of evidence-based practices could be explained by level of education, profession, knowledge of evidence-based practices and attitude regarding evidence-based practice. Fifteen percent of evidence-based practice related behaviour change was explained by knowledge of evidence-based practice. This finding did leave a large portion of behaviour change unexplained. Literature suggested other potential factors that could explain evidence-based practice related behaviour change in mental health treatment included both clinician-centred and workplace-centred factors.

Evidence-based practice (Sackett et al., 1996) was defined as the use of current best research evidence, clinical expertise, and client wishes in making decisions about individual client treatment. Evidence-based practices have been developed for different areas of mental health treatment including routine mental health (Drake et al., 2001), severe mental illness (Torrey et al., 2001), child and adolescent mental health (Hoagwood et al., 2001) and geriatric mental health (Bartels et al., 2004). At present, most mental health treatment settings employ several disciplines that can often be involved in the treatment of the same clients. Different professions have varying values and standards of practice. Implementing evidence-based practices in interdisciplinary mental health treatment situations can present benefits and challenges.

Promoters of Evidence-Based Practice Implementation in Mental Health Treatment

In research on clinical transformation from an administrative perspective Fearing et al. (2014) reported that close management and oversight was necessary in evidence-based practice implementation. They included practice leads and coaches as useful implementation strategies. Nadeem et al. (2013)¹ found one-time training ineffective for evidence-based practice implementation but concluded that results combined with coaching and consultation led to uptake. Novins et al. (2013) found the greatest success with fidelity monitoring and supervision. Palmer (2011) reported that clinician attitude and mandated use predicted evidence-based practice implementation and that attitude was predicted by workplace support for clinician innovation. In summary, current research to date has found that promoters of evidence-based practice implementation in mental health treatment included clinician attitude and innovation, management supervision and fidelity monitoring, and consultation, coaching and ongoing support.

Barriers to Evidence-Based Practice Implementation in Mental Health Treatment

Connors et al. (2015) found that clinician level of experience was inversely related to attitude toward evidence-based practice. Himelhoch et al. (2014) discovered that clinician belief that clients were not interested in the intervention was the major barrier to implementation. Weist et al. (2014) found that the greatest barriers to implementation were logistical and methodological challenges. In a study of evidence-based psychological treatment implementation Stirman et al. (2013) identified barriers around workload and productivity, and reactions to change. In a study of evidence-based practices among mental health services workers Stanhope et al. (2011) found barriers such as poor agency participation and support, inadequate training of clinicians, clinician resistance and poor supervision. In summary, current research to date has found that barriers of evidence-based practice implementation in mental health treatment included clinician attitude and beliefs, logistical, workload and productivity concerns, and poor agency support, supervision and training.

Though there is currently much evidence to support effective mental health interventions little change has been seen through improved mental health outcomes for various mental health populations (Drake et al., 2001; Fixsen et al., 2005; Torrey et al., 2001). This study seeks to gain a better understanding of the gaps between research findings and changes towards evidence use in practice. In summary, this research will examine how interdisciplinary mental health treatment professionals define and implement evidence-based practices. This study will determine the extent to which demographic, education and professional factors explain perceived outcome and behaviour change of evidence-based practice as measured by the KABQm. The previous

study outlined in Chapter Two (Paper #1) provided descriptive statistical analysis of all four domains of the KABQm and comparative analysis by education and profession.

This study will provide explanatory analysis of two domains: outcome and behavior.

Methods

Participants

The participants who took part in this study were recruited from interdisciplinary mental health treatment organizations in Ontario, Canada. The three organizations used for recruitment were: Canadian Mental Health Association-Ontario (CMHA-ON), Early Intervention in Psychosis Ontario Network (EPION), and Ontario ACT [Assertive Community Treatment] Association (OAA). As such, this was a closed survey. All participants provided survey responses voluntarily with no remuneration. Informed consent was obtained from all participants. The survey was presented to approximately 1,500 clinicians and three hundred and one (301) participants responded to the survey. Of the three hundred and one (301) participants who responded to the survey, two hundred and thirty six (236) participants completed the survey (completion rate of 78.4%; average completion time of 14 minutes 27 seconds). Though completed, three additional survey responses were removed as the participants stated that they did not want to take part in the study. Only completed surveys were analyzed. The final number of participants was 233. The sample was a convenience sample. The data was collected between April 2015 and June 2015.

Materials

The online survey consisted of two separate questionnaires. The first questionnaire was the Evidence-Based Practices Knowledge, Attitudes and Behaviours

Questionnaire-modified [KABQm] (Johnston et al., 2003 modified by Shi et al., 2014).

This survey uses 27 items across four domains (knowledge, attitude, outcome, behaviour) to measure evidence-based practice across multiple professions. The KABQm has excellent internal consistency ($\alpha = 0.85$); no floor/ceiling effects and good evidence of construct validity (Shi et al., 2014). In the original KAB, administered to clinicians working in pain treatment, the entire questionnaire, as well as each domain, scored high construct validity ($\alpha = > 0.7$ for each). There were no significant correlations between the four domains, and overall questionnaire responsiveness was satisfactory. Though there are no norms for the KABQm, for the purposes of this study, mean scores were operationalized as: 100%-75% = high; 74%-50% = moderate; 49%-0% = low. The KABQm was used in this study because of its strong validation as a tool measuring important elements of evidence-based practice with various clinician populations.

The authors developed the second questionnaire used in this study. This questionnaire is titled the Evidence-Based Practice Interdisciplinary Workplace Culture Survey (EBP-IWCS). It is a 12 item 7-point Likert scale survey designed to inquire about clinicians' perceptions about their definition of evidence-based practice, their own professional evidence-based practices, their perceptions about the evidence-based practices of the other professions in their workplace and their perception of workplace support regarding evidence-based practices. The items are inversely scored. Though there are no norms for the EBP-IWCS, for the purposes of this study mean scores will be operationalized as: 1-2 = high; 3-5 = moderate; 6-7 = low. The EBP-IWCS was used in this study to complement the KABQm regarding definition of evidence-based practice but also to inquire specifically about clinicians' perceived knowledge of evidence-based

practices, their perceived knowledge of their peers and their perception of organizational support.

Procedure

This study used a cross-sectional design and was approved by the Hamilton Integrated Research Ethics Board (HiREB). The primary author sent emails of enquiry to the three major organizations (CMHA-ON; EPION; OAA). Once approved by the organization the primary author was given contact information for an individual within each organization who would distribute the survey. The primary author provided each organizational contact person with an email containing a web link to the online survey. This email was to be distributed to staff to voluntarily participate in the survey. The survey was only available online. The primary author then contacted each organizational contact person twice at monthly intervals after an initial email, requesting reminders be sent to potential participants.

Participants were asked to provide their informed consent to participate in the survey. Participants were informed of the purpose of the study, length of time of the survey, where and how long the data were to be stored, and of the primary author of the study. No personal information was collected. Participants were then asked to respond to a series of demographic questions and the two questionnaires. The usability and functionality of the questionnaire was tested on a sample of ten clinicians before the implementation of the survey.

The online surveys used in this study were developed using and administered through FluidSurveys (Fluidware, Ottawa, ON). Responses were captured and compiled automatically into a database. Adaptive questioning was not used. There were 54 items

in total. The number of items per page varied based on the portion of the questionnaire. No cookies were used to identify participant computer. There was no IP check or log file analysis. Participants did not need to log in or register for the survey. The Checklist for Reporting Results of Internet E-Surveys [CHERRIES] (Eysenbach, 2004) was used to guide the reporting of Participants, Materials and Procedures.

Analysis

Descriptive statistics such as counts, percentages, means, standard deviations, minimums and maximums for demographics and KABQm subscale mean scores were calculated. In addition, regression analyses were conducted on dependent variables Outcome and Behaviour of the KABQm. The initial analysis in Chapter Two (Paper #1) described the phenomenon of evidence-based practice within this population of clinicians. The advanced analysis in this second paper explores factors that influence the phenomenon in order to better understand it. Descriptive statistics were conducted using Microsoft Excel 2011 for Mac. Regression analyses were conducted using STATA/IC 12.1 for Mac.

Results

In total, 233 participants completed the survey (See Table 1). The majority of respondents were female, worked with adults and held a bachelor or masters degree. Sixty three percent (148) were a member of a regulated health profession. Survey respondents represented a wide range of disciplines and years in mental health practice. Six participants described their education as “other”. Information was collected regarding access to evidence-based practice resources. While 97% had access to a computer and the Internet in their clinical setting, only 59% had access to a library and

57% had access to full text articles. Twenty percent of the clinical settings were affiliated with a university. There were respondents from all 14 Local Health Integration Networks [LHIN].

Participants responded to the Evidence-Based Practice Knowledge, Attitudes and Behaviours Questionnaire-modified (KABQm) 27-item scale (See Table 2). For more in depth descriptive information about the KABQm results and this study, see Chapter Two (Paper #1).

The knowledge subscale which measure confidence in and importance of the elements of evidence-based practice has a mean score of 81.8 (out of 100). This result suggests that respondents generally agree in the importance of and have confidence in the elements of evidence-based practice. The attitude subscale which measures respondent opinions of evidence-based practice has a mean score of 70.9 (out of 100). This result suggests that respondents have a generally positive opinion of evidence-based practice. The outcome subscale, which measures the perceived impact of evidence-based practice on respondent clinical practice has a mean score of 65.1 (out of 100). This result suggests that respondents believe that evidence-based practice has a moderate impact on their own clinical practice. The behaviour subscale which measures how frequently respondents access information on evidence-based practice has a mean score of 26.9 (out of 100). This result suggests that respondents access information on evidence-based practice less than every month.

A regression analysis was conducted with Outcome (as measured by the KABQm) as the dependent variable (See Tables 3 and 4). Education, Profession, Years of Practice in Mental Health, Evidence-Based Practice Resource Access, Knowledge (as

measured by the KABQm) and Attitude (as measured by the KABQm) were independent variables.

As there were less than 10 respondents in category 4 of Education (Doctor/Doctorate), and categories 4 (Peer Support), 5 (Psychiatrist) and 6 (Psychologist) of Profession these data were not included in the regression analysis. In addition, both “other” categories in Education (category 5) and Profession (category 8) were also removed from the regression analysis as the responses were not homogeneous. A category 9 (Case Manager) was created in Profession as 25 “other” respondents gave this response. One hundred and eighty three ($n = 183$) data points were used in the regression analysis.

All assumptions including normality and homogeneity of variance were met. A scatterplot of residuals showed that the data points are symmetrically distributed about the mean. Findings indicate that 48% of the variability found in Outcome (as measured by the KABQm) is explained by Education, Profession, Knowledge (as measured by the KABQm) and Attitude (as measured by the KABQm).

Within the Education category statistically significant differences were found between Master’s and Bachelor’s degrees and between a Master’s degree and Certificate/Diploma. Participants with Master’s degrees scored higher than both other Education categories. See Table 5.

Within the Profession category statistically significant differences were found between Occupational Therapist and all other professions (Counsellor; Nurse; Social Worker; Case Manager) with participants who identified as Occupational Therapists scoring lower. See Table 6.

Another regression analysis was conducted with Behaviour (as measured by the KABQm) as the dependent variable (See Tables 7 and 8). Education, Profession, Years of Practice in Mental Health, Evidence-Based Practice Resource Access, Knowledge (as measured by the KABQm) and Attitude (as measured by the KABQm) were independent variables.

Again, as in the above regression analysis, the same data were removed for the same reasons. One hundred and eighty three ($n = 183$) data points were used in the regression analysis. In the original regression analysis for Behaviour assumptions for normality and homogeneity of variance were not met. Therefore, the regression was conducted again using the square root of the Behaviour scores. In the second regression analysis for Behaviour the assumption for homogeneity of variance was met however the assumption for normality was not met. A scatterplot of residuals showed two significant outliers. (Data points: 118 and 174). Data point 118 is a female Master's level Social Worker between 35-44 years old with 15 years of experience in mental health treatment working with adolescents and adults in an urban setting with an overall behaviour score of 3 out of 25 (12 out of 100). This data point was very low within the group. Data point 174 is a male Master's level Social Worker between 55-64 years old, with 30 years of experience in mental health treatment working with adults in an urban setting with an overall behaviour score of 12 out of 25 (48 out of 100). This data point was very high within the group. The regression analysis was conducted once again with data points 118 and 174 removed ($n = 181$). In the third regression analysis for Behaviour all assumptions including normality and homogeneity of variance were met. The findings

indicate that 15% of the variability found in Behaviour (as measured by the KABQm) is explained by one variable, Knowledge (as measured by the KABQm).

Discussion

This study found that approximately 48% of the perceived outcome of evidence-based practices could be explained by level of education, profession, knowledge of evidence-based practices and attitude regarding evidence-based practice. Master's level clinicians scored significantly higher than Certificate/Diploma and Bachelor's level clinicians. There are many reasons that Master's level training might be a positive factor. These reasons include the total training time, specific skills training for searching and evaluating evidence, greater specific exposure to evidence-based practice or a culture emphasizing the importance of research evidence to support advancement of health. We cannot tell from this study which of these factors is most influential. Our findings are consistent with the literature regarding outcome of evidence-based practices in mental health treatment which include: training of clinicians (Starin et al., 2014), staffing and training concerns (Jefford, 2013), and clinician motivation (Powell et al., 2013). Other potential factors cited in the additional literature that could explain outcome of evidence-based practices in mental health treatment are: manager and policy-maker support (Sandstrom et al., 2014; Aarons et al., 2009), funding (Jefford, 2013) and organizational efficiency (Hovemand and Gillespie, 2010). These results suggest that the factors measured do have a significant impact on outcome but do not fully explain differences amongst the group. Literature suggests that other potential factors involving administration and organization may be important to explore in order to understand all of the factors that help to explain outcome.

According to the results of the second regression analysis approximately 15% of evidence-based practice related behaviour was explained by knowledge of evidence-based practice. These results are consistent with the literature regarding evidence-based practice related behaviour in mental health treatment which include: studying evidence clinicians require before implementing interventions (Allen and Armstrong, 2014), training (Edmunds et al., 2013) and time between training and use (Palinkas et al., 2008), all of which have to do with developing clinician knowledge of evidence-based practices.

However, this finding does leave a large portion of behaviour unexplained. More research is needed in this area. Other potential factors cited in additional literature that could explain evidence-based practice related behaviour in mental health treatment centres on two categories: clinician-centred and workplace-centred factors. Clinician-centred factors can include: clinician decision-making (Baker-Ericzen et al., 2015), clinician choice/autonomy (Williams et al., 2013), clinician response to change (Stirman et al., 2013; Stanhope et al., 2011), impact of clinician workload (Stirman et al., 2013) and clinician reliance on intuition (Gaudiano et al., 2011). Workplace-centred factors can include: the use of practice leads and coaches (Fearing et al., 2014), training consultation and ongoing support (Edmunds et al., 2013; Nadeem et al., 2013¹; Nadeem et al., 2013²), fidelity monitoring, supervision and improving organizational culture (Novins et al., 2013), supervisor behaviours (Carlson et al., 2012) and agency participation, support and supervision (Stanhope et al., 2011). This research suggests that both the clinician and organization/workplace have roles evidence-based practice behavior, supporting the complexity of understanding behavioural change.

These results also have significance in regards to the Sackett three-legged stool definition of evidence-based practice. Knowledge only explained 15% of behavior, suggesting that knowledge in the form of research evidence as measured by the KABQm, is not the only component of evidence-based practice change. The literature above also suggests that clinician-centred factors such as clinician decision-making and response to change and workload may be important in behavioral change.

In a search of systematic reviews focused on behaviour in health care, several potential factors emerge as having an impact. In a review of behavior change of health care workers in infection prevention control Edwards et al. (2012) concluded that social and cultural factors such as: effect of society and culture, behaviour and reason, perceptions of efficacy and safety in practice, and perspectives on best practice had an impact on behavior change.

Angus et al. (2013) researched behavior change models in the prevention and control of communicable diseases. They found that individual-level behavior theories such as the Health Belief Model, the Theory of Reasoned Action and the Theory of Planned Behavior, and interpersonal behaviour theories such as Social Cognitive Theory and the Transactional Stress and Coping Model were associated with positive outcomes. The New Zealand Guidelines Group (2011) reviewed the literature for behavior change in chronic care. They found that Social Learning Theory was the most widely used and effective Behaviour Change model. These results also suggest that the individual level behavior change desired may need to be supported by organizational level change.

These findings could lead organizations looking at implementation of evidence-based practices beyond education and training through to behaviour change. If this

suggestion is too far reaching they could also lead to organizations reconsidering the use of the term evidence-based practice to describe their services. Finally, they could lead to organizations allotting appropriate resources to support not only the education and promotion of evidence-based practices but their implementation, update and continued practice.

Limitations

A limitation of this study is the number of respondents. Though it was difficult to calculate the exact number of interdisciplinary mental health clinicians working in outpatient community settings in Ontario, Canada, a larger sample would lead to more responses and a lower margin of error. Future research could include a longer sampling period to receive more responses or more assertive solicitation of participants. In regard to sample size and the regression analyses several data points were removed from the original sample in Chapter Two because there were too few participants in the given professional category (i.e.: peer support worker, psychology and psychiatry) or the category was too varied (i.e.: other). Though one additional category was formed from the data in the “other” category (case management), there were a decreased number of overall participants involved in the regression analyses. In addition, several changes were made in the data set for Behaviour to correct for unmet assumptions (i.e.: homogeneity and normality).

Conclusion

This study determined that about half of the factor of outcome could be explained by level of education, profession, knowledge of evidence-based practice and attitude regarding evidence-based practice. Behaviour can be explained to a lesser extent (15%),

and was only associated with level of knowledge of evidence-based practice. This result suggests that behavior is more complex and more difficult to change and measure than knowledge. Additional training that includes both instrumental skills and addresses attitudes may enhance evidence-based practice in mental health treatment.

Table 1

Participant Demographics

	Total	Percentage
	233	
A1. Gender		
Female	191	82%
Male	41	17.6%
Other	1	0.4%
A2. Age		
18-24	8	3.4%
25-34	70	30.0%
35-44	57	24.5%
45-54	61	26.2%
55-64	35	16.3%
65 +	2	0.9%
A3. Education		
Certificate/Diploma	65	27.9%
Bachelor's Degree	77	33.1%
Master's Degree	80	34.3%
Doctorate	5	2.2%
Other	6	2.6%
A4. Profession		
Counsellor	16	6.9%

Nurse	52	22.3%
Occupational Therapist	18	7.7%
Peer Support	7	3.0%
Psychiatrist	3	1.3%
Psychologist	6	2.6%
Social Worker	76	32.6%
Other	55	23.6%
A6. Years of Practice in Mental Health	(Mean = 12.8)	
< 5	52	22.3%
5-9	57	24.5%
10-14	40	17.2%
15-19	25	10.7%
20-24	22	9.4%
25-29	14	6.0%
30-34	14	6.1%
35-39	5	2.2%
40 +	4	1.7%
A7. Clinical Population	(More than one choice allowed)	
Children	14	
Adolescents	96	
Adults	219	
Older Adults	78	

Other	8	
A8. Clinical Setting		
Assertive Community Treatment	66	28.3%
Community Mental Health	105	45.1%
Early Intervention in Psychosis	51	22.0%
Other	11	4.7%
A9. Community setting		
Rural	76	32.6%
Urban	157	67.4%

EBP Access	Yes	No
A5. Regulated Health Professional	148 (63.5%)	85 (36.5%)
A11. Access to library in clinical setting	138 (59.2%)	95 (40.8%)
A12. Access to computer in clinical setting	227 (97.4%)	6 (2.6%)
A13. Access to internet in clinical setting	229 (98.3%)	4 (1.7%)
A14. Access to full text articles in clinical setting	134 (57.5%)	99 (42.5%)
A15. Clinical setting affiliated with university	47 (20.2%)	186 (79.8%)

A10. Local Health Integration Network (LHIN)	Number of Participants
LHIN 1-Erie St. Clair	8
LHIN 2-South West	19
LHIN 3-Waterloo Wellington	9
LHIN 4-Hamilton Niagara Haldimand Brant	16

LHIN 5-Central West	3
LHIN 6-Mississauga Halton	10
LHIN 7-Toronto Central	15
LHIN 8-Central	12
LHIN 9-Central East	75
LHIN 10-South East	3
LHIN 11-Champlain	16
LHIN 12-North Simcoe Muskoka	9
LHIN 13-North East	25
LHIN 14-North West	13

Table 2

KABQm Subscale Mean Scores (out of 100)

	Mean	SD	Minimum	Maximum
Knowledge	81.8	10.9	48.6	100
Attitude	70.9	10.1	45.1	95.6
Outcome	65.1	14.6	16.7	100
Behaviour	26.9	13.2	0	92

Table 3

Outcome Regression Descriptive Statistics

Variable	n	Mean	SD	Minimum	Maximum
Outcome	183	64.7	15.0	22.2	100
Education	183	2.1	0.8	1	3

Profession	183	45.0	2.8	1	9
Years of Practice in MH	183	12.6	10.0	1	44
EBP Access	183	6.7	1.1	5	10
Knowledge	183	81.6	11.1	48.6	100
Attitude	183	70.7	10.4	45.1	95.6

Table 4

Outcome Regressions Analysis

Source	F-value	p-value
Model	15.8	< 0.001*
Education	5.9	0.0033*
Profession	4.6	0.0015*
Years of Practice in MH	0.6	0.4
EBP Access	1.9	0.2
Knowledge	28.2	< 0.001*
Attitude	40.5	< 0.001*
r-squared = 0.48	Adjusted r-squared = 0.45	Root MSE = 11.2

* = Statistically significant

Table 5

Comparisons of Education

Education	Contrast	Standard Error	Sidak [95% Confidence Interval]
2 vs. 1	3.0	2.3	-2.5 ± 8.4
3 vs. 1	8.5	2.6	2.3 ± 14.7*

3 vs. 2	5.5	2.1	0.5 ± 10.6*
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1 = Certificate/Diploma; 2 = Bachelor's degree; 3 = Master's degree; * = Statistically significant difference

Table 6

Comparisons of Profession

Education	Contrast	Standard Error	Sidak [95% Confidence Interval]
2 vs. 1	-0.7	3.3	-10.0 ± 8.5
3 vs. 1	-14.5	4.0	-25.9 ± -3.1*
7 vs. 1	-5.6	3.2	-14.5 ± 3.4
9 vs. 1	-2.4	3.7	-12.8 ± 8.0
3 vs. 2	-13.7	3.4	-23.5 ± -4.0*
7 vs. 2	-4.8	2.4	-11.5 ± 1.9
9 vs. 2	-1.7	2.8	-9.6 ± 6.3
7 vs. 3	8.9	3.0	0.2 ± 17.6*
9 vs. 3	12.1	3.8	1.3 ± 22.9*
9 vs. 7	3.1	2.9	-5.0 ± 11.2

1 = Counselling; 2 = Nursing; 3 = Occupational Therapy; 4 = Peer Support; 5 = Psychiatry; 6 = Psychology; 7 = Social Work; 9 = Case Management; * = Statistically significant difference

Table 7

Behaviour Regression Descriptive Statistics

Variable	n	Mean	SD	Minimum	Maximum
Behaviour	181	26.1	12.1	4	68

Education	181	2.1	0.8	1	3
Profession	181	5.0	2.8	1	9
Years of Practice in MH	181	12.4	9.8	1	44
EBP Access	181	6.7	1.0	5	10
Knowledge	181	81.5	11.1	48.6	100
Attitude	181	70.6	10.3	45.1	95.6

Table 8

Behaviour Regression Analysis

Source	F-value	p-value
Model	3.1	0.0013*
Education	0.9	0.4
Profession	2.1	0.1
Years of Practice	0.9	0.4
EBP Access	2.1	0.1
Knowledge	8.5	0.004*
Attitude	0.3	0.6
r-squared = 0.15	Adjusted r-squared = 0.10	Root MSE = 1.1

* = Statistically significant

Chapter Four

Interdisciplinary Mental Health Professionals' Definition and Implementation of Evidence-Based Practices: An Interpretive Description

Abstract

While there is knowledge of clinicians' perceptions of potential facilitators and barriers there has been little research to understand the definitions, experiences and opinions of clinicians working in interdisciplinary community mental health treatment settings regarding the implementation of evidence-based practices. This study explored 1) how clinicians defined evidence-based practice, 2) how clinicians perceived the implementation of evidence-based practice, and 3) what clinicians' knowledge, beliefs and practices were regarding evidence-based practice. Eight (8) clinicians working in interdisciplinary mental health treatment settings across Ontario were interviewed about their subjective perceptions and how they defined and implemented evidence-based practices. A qualitative approach of Interpretive Description (Thorne et al., 1997) was used to guide the research. Study findings were presented in three main areas: definitions of evidence-based practice, components of evidence-based practice implementation, and central tensions related to evidence-based practice. Participants defined evidence-based practice as *using research-based literature, using clinical expertise, or using the three-legged stool*. Components important for evidence-based practice implementation include *creating conditions, accessing evidence, motivating practice and reflecting critically*. Central tensions for these clinicians include *valuing research evidence versus clinical expertise, fidelity versus customization, defining roles versus role sharing, and implementing evidence-based practice versus managing clinical workload pressures*.

Evidence-based practice was originally defined as the use of current best research evidence, clinical expertise, and client wishes in making decisions about individual client treatment (Sackett et al., 1996). Evidence-based practice is an important concept in health care in that it provides a rationale for interventions to ensure that clients receive optimal care. This rationale is particularly important in mental health treatment because historically interventions have been implemented without strong rationale. For example, in a systematic review of evidence-based practice implementation in routine mental health treatment settings Drake et al. (2001) reported that in spite of evidence on effective interventions in mental health treatment most programs did not provide these interventions to their clients. This area of practice is particularly important to consider because of the abstract nature of service provision and potential vulnerability of service recipients.

A range of evidence-based practices have been documented as they pertain to specific domains of health care delivery (Upshur, 2005). Systematic reviews of evidence-based practices have been conducted for different aspects of mental health practice including routine mental health (Drake et al., 2001), interventions for severe mental illness (Torrey et al., 2001), child and adolescent mental health (Hoagwood et al., 2001) and geriatric mental health (Bartels et al., 2004). The inter-disciplinary nature of many mental health treatment settings means that there may be differing opinions or interpretations about this evidence based on variations in training, values, and standards of practice across the different professions (Council for Training in Evidence-Based Behavioural Practice, 2008). As a result, implementing evidence-based practices in

interdisciplinary mental health treatment situations may be inconsistent and may not meet fidelity standards.

Mental health research has begun to explore facilitators and barriers to evidence-based practice implementation. Some facilitators of evidence-based practice in mental health treatment included consultation, coaching and ongoing support (Nadeem et al., 2013), management supervision and fidelity monitoring (Novins, 2013), and clinician attitude and innovation (Palmer, 2011). Some barriers to evidence-based practice implementation in mental health treatment included clinician attitude (Connors et al., 2015) and beliefs (Himelhoch et al., 2014), logistical (Weist et al., 2014), workload and productivity concerns, and poor agency support, supervision and training (Stanhope et al., 2011). It is important to understand mental health professionals' experiences.

Recognizing strengths and resolving difficulties in this area can lead to improved uptake and implementation. The following literature review will explore these clinician perceived facilitators and barriers of evidence-based practice in mental health treatment in greater detail.

Clinician Perceived Facilitators of Evidence-Based Practice in Mental Health Treatment

There are a number of characteristics of clinicians that predict the extent to which they engage in evidence-based practice, including their attitude and motivation to adopt evidence-based approaches. For example, in a quantitative survey of 225 community mental health clinicians working with children and adolescents Allen and Armstrong (2014) concluded that positive clinician attitude toward evidence-based practice predicted a preference for clinical trials. Najavitis et al. (2011) conducted a mixed methods survey

of 205 Veterans Affairs staff on their views of evidence-based psychotherapeutic interventions for PTSD and substance abuse. They found that the more clinicians used an evidence-based psychotherapeutic intervention in practice the more helpful they found it. In a survey of 146 community mental health centre clinicians Palmer (2011) researched mental health clinician experiences in implementing evidence-based practice psychotherapy. Palmer found that attitudes and mandated use of evidence-based practices lead to implementation.

Organization-centred facilitators included resources and supports (both human and material) that supported evidence-based practice implementation. For example, Hamm et al. (2014) investigated the perspectives of community mental health clinicians and administrators on the implementation of the evidence-based psychotherapy, Interpersonal and Social Rhythm Therapy for bipolar disorder. In 30 minute semi-structured interviews with 17 clinic administrators, supervisors and clinicians, they discovered the perceived facilitators to evidence-based practice implementation included support from supervisors and peers, decreased workload requirements, and compensation for time spent learning. In a mixed methods study consisting of surveys, focus groups and interviews, Herschell et al. (2014) studied the perspectives of 41 community-based mental health clinicians and supervisors regarding their training needs for evidence-based practices. The specific themes they observed included ongoing support from trainers, agencies, supervisors and peers. In a qualitative study of the narratives of 11 mental health clinicians, Powell et al. (2013) investigated clinician experiences in implementing evidence-based practices. They discovered that facilitators included organizational commitment, appropriate funding, training and ongoing support, and fidelity monitoring.

In a quantitative survey of 1,112 mental health service providers, Aarons et al. (2012) researched clinician attitudes toward evidence-based practice. They learned that positive clinician attitudes toward evidence-based practices were found in organizations with more leadership engagement and less stress throughout the organization.

Training-centred facilitators were those that focused on training-based explanations for evidence-based practice implementation. Bearman et al. (2015) conducted a quantitative survey of 42 students within a professional psychology doctoral program regarding changing clinician attitudes toward evidence-based practices. They found that preparation and training of the students in the form of pre-practicum training improved clinician attitude toward evidence-based practices. Allen and Armstrong (2014) also found that case studies and clinical trials were the most preferred types of evidence. Herschell et al. (2014) also found that participants preferred interactive training methods instead of lecture-based methods and the structuring of training methods with an awareness of clinician time constraints. From the perspective of clinicians, facilitators of evidence-based practice implementation in mental health treatment included personal factors, the organizational context, and the training approach.

Clinician Perceived Barriers to Evidence-Based Practice in Mental Health

Treatment

Several perceived barriers to evidence-based practice implementation in mental health treatment stemmed from personal and professional clinician beliefs and experiences. In a mixed methods study utilizing the quantitative survey of 141 clinicians and qualitative interview of 14 clinicians, Connors et al. (2015) studied the implementation of evidence-based assessments by community-based clinicians working

in school mental health. They discovered that clinician level of experience was inversely related to overall attitude toward evidence-based practice. In a literature review of factors in the adoption or non-adoption of evidence-based practices in mental health, Gallo and Barlow (2012) found barriers in clinician “proclivity” to adopt innovations even within supportive organizations such as inability to keep up with literature and clinician-perceived difficulty in accessing evidence-based practices. In a quantitative survey of 543 master’s level mental health and substance use clinicians working with adolescents, Ashcraft et al. (2011) looked at clinician attitudes toward evidence-based treatments and discovered that clinician beliefs in negative outcomes of evidence-based treatments were associated with low clinician openness to new treatments and beliefs that evidence-based treatments did not produce a positive outcome. In an Internet-based quantitative survey of psychotherapists, Gaudiano et al. (2011) studied differences in evidence-based practice attitudes of psychotherapists and discovered that clinicians who relied on intuition were associated with negative attitudes toward research, decreased openness to researched-based treatments, and decreased willingness to use evidence-based treatment if mandated. In a qualitative focus group study of evidence-based practice barriers of mental health clinicians working in the treatment of depression in youth, Hetrick et al. (2011) researched clinician attitudes toward guideline recommendations for the treatment of depression in youth. They found the key clinician-level barriers were clinician beliefs that the guidelines were not relevant, that there was little actual evidence to guide their practice, and that the severity and complexity of the client population made the implementation of guidelines difficult.

Other perceived barriers to evidence-based practice implementation in mental health treatment revolved around time and workload constraints. Hamm et al. (2015) also discovered that participants identified barriers to evidence-based practice implementation including client no-shows, difficulties in implementation from training to practice, and time or workload constraints. In a review of a research program designed to study the implementation of evidence-based practices in school mental health, Weist et al. (2014) looked at clinician attitude and behaviour change, and found that logistical and methodological challenges were the greatest barrier to implementation.

Another perceived barrier to evidence-based practice implementation in mental health treatment was access to evidence. Connors et al. (2015) found that clinicians did not feel as though they had access to resources they like or needed. Barnett et al. (2014) concluded that clinician perceived barriers to evidence-based practice implementation were limited access to evidence-based practices. Clinician perceived barriers to evidence-based practice implementation in mental health treatment were clinician experience and clinician belief, time and workload constraints, and access to evidence.

While knowledge about clinicians' perceptions of potential facilitators and barriers in specific areas of mental health practice with specific interventions and with specific populations has been gathered, there has been little research to understand the definitions, experiences and opinions of clinicians working in interdisciplinary community mental health treatment regarding the implementation of evidence-based practices.

In summary, the purpose of this research is to understand the subjective perceptions of interdisciplinary mental health treatment professionals working in

community mental health treatment settings and how they define and implement evidence-based practices. This study will explore: 1) how clinicians define evidence-based practice, 2) how clinicians perceive the implementation of evidence-based practice, and 3) what clinicians' knowledge, beliefs and practices are regarding evidence-based practice.

Methods

Design

This study utilized an interpretive description approach, a qualitative method that used inductive analysis to highlight emerging themes and patterns with respect to clinical phenomena (Thorne et al., 1997). This design was chosen because of its specific development for and application within health care. In addition, a main focus of interpretive description is to apply “qualitative investigation of a clinical phenomenon for the purpose of capturing themes and patterns within subjective perceptions and generating clinical understanding” (Thorne et al., 2004). This design is in line with the aims of this study as this study explores clinicians' understanding of evidence-based practice to develop knowledge about how clinicians define and implement evidence-based practice and to develop a better sense of clinician experience of evidence-based practice. The Hamilton Integrated Research Ethics Board (HiREB) approved this study.

Sample

At the beginning of this study a convenience sample of clinicians working in interdisciplinary mental health treatment settings across Ontario was recruited. While there are no definitive rules to determine the sample size for this type of study, considerations were given to both methodological and practical issues. A goal was to

have a diverse sample and enough participants to achieve saturation of the data (Mason, 2010). Given these considerations, a goal was set to achieve a sample size of 12 participants. From a practical perspective, time and limited funding for transcription put some limits on the sample size. In the end, 8 participants took part in the study.

Four clinicians were recruited from the same organizations represented in the sample of the survey (quantitative) portion of this study (Papers #1 and #2). Additional participants were gathered using snowball sampling (Newell and Burnard, 2011). The sample was generated in an attempt to get diversity in opinions and to understand different perspectives. Inclusion criteria included clinicians of varying disciplines and education levels working within interdisciplinary mental health treatment teams. Considerations of the sample characteristics also included: gender, education, profession, years of experience, clinical population served and geographic location. This strategy was to ensure variation on key dimensions of difference that may shape beliefs and practices about evidence-based practice.

Recruitment

The participants who took part in this study were all recruited from interdisciplinary mental health treatment organizations in Ontario, Canada. The organizations were: Canadian Mental Health Association-Ontario (CMHA-ON), Early Intervention in Psychosis Ontario Network (EPION), and Ontario ACT [Assertive Community Treatment] Association (OAA). These organizations all provide outpatient, community-based interdisciplinary mental health treatment. They were chosen because the characteristics of their clinicians align with the goals of this research, to explore the experiences of community-based mental health clinicians who work in an inter-

disciplinary team. Clinicians working within these organizations work in mental health treatment and among other clinicians with various levels of education and of various professions. Information about the study was provided to a contact person within each organization. Interested participants then contacted the primary author to discuss any questions and set an interview time and date. The primary author recruited 4 additional participants through local community mental health work or through other mental health treatment professionals who participated in this study. From May 2015 to September 2015, a total of eight participants were recruited and interviewed.

Data Collection

All interviews were semi-structured, single interviews incorporating open-ended interview questions (See Appendix). The survey statements and findings of the quantitative surveys from Chapter 2 and Chapter 3 (Paper #1 and Paper #2) were used to frame the interview questions. The primary author (AD) conducted all of the interviews. The interview questions inquired about: personal definition of evidence-based practice, evidence-based practice information access, perceived effectiveness of evidence-based practice, knowledge of evidence-based practice, and perceived workplace support of evidence-based practice. Where appropriate, probes such as “Can you talk about that a bit more?” or “Can you provide an example?” were used to expand or clarify responses. Six interviews were conducted in person and two by phone, as some of the participants were geographically dispersed. All in person interviews were conducted in a private and quiet environment. The interviews ranged in length from 20 to 40 minutes, with an average length of 27.5 minutes. Informed consent was obtained prior to each interview.

Data Analysis

All interviews were audio recorded and transcribed verbatim. Before transcription, the primary author listened to each interview twice in order to gain an overall understanding of the interview content and process. Extensive notes were taken regarding key issues and categories from each interview. After transcription, the primary author read through each interview twice. Once again, extensive notes were taken regarding key issues and categories from each interview. The primary author began outlining the emerging codes. The primary author then read through all of the interview transcripts while listening to the interviews to correct any potential transcription errors. The primary author and one co-author (SM) read through two interviews together to begin to develop codes (categories), definitions and a codebook. Two co-authors (SM and ML) also read through four of the interviews and provided feedback on emerging categories. The primary author then read through the interviews once again to develop the codebook, definitions and grouping of codes (categories and subcategories). Two co-authors (SM and ML) assisted in editing and refining the codebook. The primary author then coded the interviews and entered the data. This process helped to further edit and refine the resulting codebook, codes (categories and subcategories) and definitions. This approach is congruent with the methodological approach of interpretive description. The dual purpose of interpretive description is to both 1) describe participants' experiences, to generate categories and definitions, and then to 2) interpret the findings, to generate knowledge that can be used to move the field forward or better understand the issues (Thorne et al., 2004). NVivo 11 for MAC (QSR International, 2015) was used for the organization and retrieval of data.

Several strategies were employed to maintain methodological rigour. In a discussion of rigour in qualitative inquiry for studies using semi-structured interviews Morse (2015) proposed the development of a coding system and an account of inter-rater reliability (via double coding) to account for rigour. This study used semi-structured interviews and has a developed coding system. In this study, there is the use of some double coding, however, it is limited to 2 interviews. The primary author and one co-author (SM) met to begin the coding process. They read through two interviews together. While reading through the interviews they wrote down codes that emerged from the data. With the emerging codes, they also began to develop definitions and categories for the codes. This initial coding process became the basis for the codes throughout the study.

In regards to saturation, this study did not reach its intended sample size goal. This may hold implications for achievement of saturation (Mason, 2010). Saturation was examined from a broad perspective. According to Fusch and Ness (2015) data saturation occurs when three conditions are met. These conditions include: 1) when there is enough information that the study can be replicated, 2) when little or no new information is obtained during interviews, and 3) if no new codes have emerged from the data. In this study, these conditions were judged to be met in that there is enough information to replicate the study (within this paper), little new information was obtained during the final 2 interviews and no new codes emerged from the data. In another discussion on saturation, O'Reilly and Parker (2012) state that saturation ensures a “depth and breadth of information”. The current study may not have achieved this goal. The interview questions were specific, did not vary and there was some, but not extensive probing outside of the original questions. To achieve greater depth and breadth of information,

the interviewer could have allowed for greater expansion of responses and engaged in more probing of responses. He could have also observed clinicians in practice, used methods of triangulation, or had more prolonged engagement in the field. The strengths of this study regarding saturation are that it can be replicated, no new information emerged from the data and no new codes emerged from the data (Fusch and Ness, 2015). However, it is clear that this study did not achieve all possible aspects of saturation. The limitations of this study regarding saturation are that this study did not reach its intended sample size (Mason, 2010) and does not likely provide a full depth and breadth of information (O'Reilly and Parker, 2012).

In this type of research reflexivity enhances accuracy, credibility and trustworthiness. A reflexive journal can be used to help the researcher monitor his or her level of involvement in the study. The process of maintaining a reflexive journal is an important strategy because it assists the researcher in recognizing how they are situated within the research and the impact the researcher may have on the research itself (Berger, 2015). The primary author maintained a journal throughout, covering this study and the two other studies comprising his thesis. This journal contains reflective entries regarding reasons for conducting this research, how the primary author is situated within this research, the interview data and elements of the thesis as a whole. The primary author of this study currently works as a mental health clinician within an interdisciplinary mental health treatment setting in Ontario, Canada. He developed the idea for this research several years ago while working within another large, interdisciplinary mental health treatment setting in Ontario, Canada, which was in the midst of an evidence-based practice change. Due to his history and present work situation, he has knowledge of

situations similar to those of the interview participants. This knowledge did have an impact on interview question development. The questions were based not only on the quantitative measures used in Paper #1 and Paper #2, but also the primary author's experience and knowledge as a clinician in an interdisciplinary mental health treatment setting and in a similar organization undergoing an evidence-based practice change. The benefits of this type of insider perspective are that the researcher could have a greater opportunity to gain access to interviewees and may have a better understanding of the perspectives of the interviewees. Another benefit is that the researcher would have knowledge of the field that may improve the depth of the information the interviewee is willing to share. However, one of the challenges lies in allowing the opinions of the interviewees to come through in the research and not be overshadowed by the researcher's own opinions and experience (Berger, 2015). Given the primary author's history, this challenge was a concern in this study. This concern was addressed through peer debriefing with a co-author (SM) through email and telephone conversations throughout the course of the study. After four interviews, the interview questions were re-examined and re-structured with a co-author (SM). In addition, the codebook and definitions were re-examined throughout the study with co-authors (SM & ML). Through this process, the primary author was able to challenge his own assumptions and consider his own perspective in the context of the data.

Results

In total, 8 participants completed the interviews. Six participants were female and two were male. Four participants held a Master's Degree, three a Bachelor's Degree and one a Doctorate. The participants included two counsellors, two nurses, one clinical

educator, one occupational therapist, one psychiatrist and one social worker. The average years of experience in mental health treatment was 15.5 years, ranging from 3 years to 30 years. Four participants worked with youth, adult and older adult populations, three participants worked with youth and adult populations, and one participant worked with child and youth populations. Two participants were from very dense urban settings in Ontario, four were from moderately dense urban settings in Ontario and two were from rural settings in Ontario.

In the process of analysis participants' responses were grouped into three major categories. The first category, *Defining Evidence-Based Practice*, included three key ways in which participants personally defined evidence-based practice. The second category, *Components of Evidence-Based Practice Implementation*, consisted of four central forces that shaped implementation of evidence-based practice. The third category, *Central Tensions in Evidence-Based Practice*, consisted of four themes that characterized conflicts noted by participants regarding implementation of an evidence-based practice approach. (See Table 1)

Defining Evidence-Based Practice

When providing personal definitions of evidence-based practice participant responses reflected one of three different conceptualizations of evidence-based practice: an emphasis on the use of research evidence, an emphasis on the use of clinical expertise, or an emphasis on the combination of research, clinical expertise, and client needs (similar to the original Sackett et al. (1996) definition of evidence-based practice).

Using research-based literature

Most of the participants defined evidence-based practice as using research-based literature, which are practices confirmed by literature, such as peer-reviewed journal articles, text books and databases. As one participant noted:

“I guess what comes to mind when I think about evidence-based practices are interventions or, kind of, theoretical treatment models, that have been researched so that they have been peer reviewed in journals.” (Bachelor’s; Counselling)

This quote describes a view of evidence-based practice that is solely based on the use of interventions that are supported by some type of research evidence. Some participants spoke to confirmation through systematic reviews, randomized controlled trials, and databases such as Cochrane. Others simply commented that evidence-based referred to an intervention that had some form of generic research to support it.

Using clinical expertise

Some of the clinicians emphasized the importance of clinical expertise as part of evidence-based practice explaining that this clinical expertise involves incorporating the clinicians’ practice wisdom and/or experiences. For example, one participant said:

“I think that it is basically looking at the practice based literature, because I think that every profession has best practice, kind of, what works. So I think part of it is balancing of intuition, sort of, what the evidence says and what your practice wisdom is and trying to balance that.” (Master’s; Social Work)

This quote articulates the thought that evidence-based practice is not solely the use of research-based literature to make clinical decisions but also the use of clinical expertise, expressed through the balance of intuition and “practice wisdom”. Another clinician articulated that clinical expertise, comprised of assessment skills, compassion,

therapeutic rapport and “common sense”, was more important than research-based literature. Clinicians varied in terms of the importance they attached to clinical expertise as a complement to research evidence in evidence-based practice.

Using the three-legged stool

Some of the clinicians provided an expanded definition of evidence-based practice specifically referring to the Sackett et al. (1996) description, sometimes referred to as “The Three-Legged Stool” or “The Three Pillars of evidence” which occurs when evidence-based practice is defined as using current best research evidence, clinical expertise, and client wishes in making decisions about individual client treatment. One participant, for example, commented:

“I was introduced to the concept of evidence-based practice during my degree and we were taught the model that was written by Dave Sackett who describes and defines evidence-based practice including three pillars and those include: the client’s wishes and beliefs, your own clinical expertise based on your experience, and then also research and information from academic papers and studies.”

(Master’s; Occupational Therapy)

This clinician expresses the idea that evidence-based practice is comprised of the three components put forth in the original definition of evidence-based practice by Sackett et al. (1996). Another clinician however proceeded to explain that clinicians who have more experience or who have been working in the field for longer tends to rely more on clinical expertise and client wishes. She also added that she is concerned that evidence-based practice is so focused on the research evidence that clinical expertise and client wishes will eventually disappear.

Components of Evidence-Based Practice Implementation

Creating conditions

All participants said that time, opportunity, resources and overall organizational culture were necessary conditions for the implementation of evidence-based practice. This condition occurs when the organization sets aside time, creates a situation (meetings, exchange of information, information access points) or provides resources (money, breaks from clinical work, space) for accessing evidence-based practice-related information or training and has organizational leadership that promotes awareness, dialogue and intention of evidence-based practice. One participant commented:

“Really they (the organization) try and do a good job at making sure we know all of that stuff and educating us and bringing in speakers of what is the most evidence-based practice at the time. They do really and they are supportive for sure.” (Bachelor’s; Nursing)

This quote illustrates how the clinician’s organization provided resources to support evidence-based practice education. Other clinicians had a similar report stating that efforts by their organizations through organizing education on evidence-based practices or paying and allowing for time off for evidence-based practice training, help to support evidence-based practice implementation. Another clinician mentioned that he created and implemented his own program of study for evidence-based practice implementation, and therefore creates his own time and resources for evidence-based practice.

Other clinicians expressed concern that their organization did not create time, opportunity or allocate resources, and therefore do not promote a culture for evidence-

based practice implementation. One clinician said that her organization would be supportive of the change was initiated, lead and resourced by her, but would not be supportive if it disrupted the operations of the organization. Another clinician reported that she had to lead and fund her own evidence-based practice education and implementation, which from an organizational perspective she found challenging as the organization benefited from her efforts. Finally, another clinician said that all organizational decisions were made from a financial savings bias, and that the organization would support evidence-based practice training and implementation if it ultimately saved money. In summary, there was variation in terms of the degree to which organizations reportedly created the conditions for evidence-based practice implementation.

Accessing evidence

All participants noted that accessing evidence was a major component of the evidence-based practice implementation process. Accessing evidence encompasses the various methods clinicians use to acquire evidence-based practice related information.

One participant commented:

“The multidisciplinary team will share peer reviewed journal articles with each other. I have access to a couple of different databases that provide me with that kind of information. And within my home agency, when new info comes about, it will also, kind of, be distributed and, sort of, be up for discussion if there’s a new practice or a new intervention that seems worthwhile implementing.” (Bachelor’s; Counselling)

This quote describes the view of a team sharing research-based practice information. Other routes of access to research evidence included online journals, listserves, databases, videos, webinars, books and libraries. Clinicians also felt it was important to access evidence to fully understand the clinical issues being presented to them. One participant reported:

“I usually go back to the literature to look at the macro level. When you think about clinical stuff, when you do an assessment with somebody, when things started to go off the rails is often because you’re not sure why you are seeing the person or what you are doing. So it’s like going back to the beginning to see what is going on, and I think that is where the evidence-based practice comes in.”

(Master’s; Social Work)

This clinician expresses the opinion that accessing evidence to understand the clinical issues or concerns provides a clinical context for the implementation of evidence-based practice. Clinicians use various routes to access evidence, and some said that accessing evidence helps to provide a clinical context for implementation.

Motivating practice

Many participants also referred to the ways in which they were motivated to engage in evidence-based practice. Competition with other clinicians, pressure from management and goals for self-improvement were identified as drivers for upgrading or improving clinical practice. For example, one participant reported:

“It has to do with the commitment to have excellent practice. I find that there is a keener interest from professionals to excel when they are in a more competitive environment, and there is also a component of wanting to do best because you

know you have peers that are the same caliber. You want to do better. When you don't have competition, it is harder to drive yourself to do well." (Bachelor's; Clinical Education)

This quote describes the opinion that competition among professionals is a driving force for evidence-based practice implementation. Other clinicians discussed organizational level motivation of evidence-based practice implementation such as agency accreditation, funding, and credibility within the larger field of health care. Another clinician asserted that the clinician's own personal goals for self-improvement, and support from management through creating in-house clinical experts, would lead to greater evidence-based practice implementation.

Others described a lack of practice motivation, even in the context of evidence-based practice training and support. One participant commented:

"You know, they sent people to go to DBT, and so they do the training and then people come back to agency and are kind of like, you know, 'this wasn't helpful' and then it's okay not to use it, and so that's it." (Master's; Counselling)

This quote illustrates that at times, clinicians attend evidence-based practice trainings and upon return the clinicians do not implement the evidence-based practice. Another said that he has seen this process happen, but that he does not feel that the onus in such situations always falls on the clinician and that the clinical environment or organizational culture might not be a fit for the intervention. Although some clinicians described practice motivation from a variety of individual and organizational sources, others observed a lack of practice motivation even with organizational support.

Reflecting critically

Most of the participants also reported that critical reflection on evidence effectiveness was a major component of evidence-based practice implementation. One participant said:

“I think that what I do is considered to be evidence-based. It’s on the Cochrane database or whatever that is, and I think that it’s effective. I’m not totally convinced that because something is evidence-based that it’s necessarily effective, I guess.” (Master’s; Counselling)

This quote illustrates how published evidence for an intervention may not be enough to convince clinicians that it is effective in practice. One clinician stated that the assessment of effectiveness in mental health treatment was difficult, if not impossible, due to the lack of measureable biometrics, such as blood work or x-rays, as in other areas of health care. Another clinician said that she thought that both evidence-based and non-evidence-based practices were effective, especially depending on the setting. Non-evidence-based practices were simply all other practices that did not come with the label “evidence-based”. Finally, one clinician articulated that evidence-based practices might be good as a guideline but she did not feel they were particularly effective. Research evidence therefore, was not necessarily adopted without critical reflection on its relevance in the clinical context.

Central Tensions in Evidence-Based Practice

When participants described their experiences, there were differences of opinion, or tensions, evident in the field about translating evidence into practice. There appeared to be four central tensions related to: 1) the privileging of one type of knowledge over another (Valuing research evidence versus Clinical expertise), 2) the extent to which

evidence is seen as facilitative versus restrictive (Fidelity versus Customization), 3) the ways in which clinicians define their roles in regard to evidence (Defining roles versus Role sharing) and 4) the degree to which evidence is prioritized over other workload demands (Implementing evidence-based practice versus Managing clinical workload pressures).

Valuing research evidence versus Clinical expertise

There was tension between maintaining strict adherence to research evidence versus acknowledging that clinical experience and meaningful interactions with clients lead to positive outcomes in client treatment. One participant said:

“I do think that we need some kind of guidelines and things to work for and strive for, you know, but I don’t think that it is all. I mean we can have as much evidence as we want, but if you can’t connect with the person, or have a therapeutic relationship with them, or make them feel safe and comfortable and less vulnerable, then really we aren’t going to get anywhere.”

(Bachelor’s; Nursing)

This quote illustrates the idea that if the focus of evidence-based practice is solely research there will be a missed connection in the interaction between the clinician and the client. This clinician feels that therapeutic rapport and clinical expertise are key in mental health clinical interventions, and expresses concerns that that “evidence-based practice” might devalue this aspect of clinical treatment. Similarly, another clinician complained that the move to evidence-based practices would limit useful practical and informative interventions such as brief assessment and education through casual

conversation with clients. There was a concern among some clinicians that the focus on research evidence in evidence-based practice will hinder other aspects of client treatment.

Fidelity versus Customization

There was also tension between implementing evidence-based practices as structured interventions that do not allow for deviation or flexibility. For example, one participant noted:

“I can see there are other people who aren’t as much of a fan of evidence-based practices. I can see how they might think that it’s a bit too standardized or a bit too inflexible. But I think there needs to be some structure to what we do. It can’t just be a free for all. There has to be some structure attached to our interventions that can be measured and documented.” (Bachelor’s; Counselling)

This clinician expresses the opinion that although some clinicians might think evidence-based practices are too rigid there does need to be structure and accountability. Another clinician said that she knows of clinicians who claim to use an eclectic evidence-based practice approach, utilizing pieces of evidence-based practices for different clinical situations. She stated that this process is not an evidence-based method of practice and does not lead to practice fidelity. Yet another clinician expressed the opinion that her practice is eclectic and that her ability to shift between evidence-based practices based on the situations and presentations of her clients is a benefit to her practice and clients. There are varying opinions as to the degree to which evidence-based practices should be applied specifically as described.

Defining roles versus Role sharing

There was another tension between clinicians defining their own roles as implementers of discipline-specific evidence-based practices versus clinicians who feel that clinicians of various disciplines working together share similar responsibilities and research evidence, including evidence-based practices. One participant commented:

“We have such a problem defining our role and communicating our role that, if we do too much borrowing from other places, that we lose our professional identity and what we really bring to a multidisciplinary team.” (Master’s; Occupational Therapy)

This clinician expresses the view that clinicians working within interdisciplinary treatment settings sometimes take on roles or evidence-based practices of other disciplines, and, in that action, run the risk of losing their specific professional role and that role’s benefit to the treatment team. Another clinician said that he doesn’t feel clinicians in interdisciplinary settings are looked at as one specific discipline, but rather feels clinicians do many of the same things. He added that when looking at evidence-based practices, he does not stick to his own specific discipline. Yet another clinician articulated that she recognizes the benefits of each specific discipline’s skills on the treatment team. There are varying opinions as to whether research evidence related to interdisciplinary roles should overlap or be shared.

Implementing evidence-based practice versus Managing clinical Workload Pressures

An underlying theme throughout the study was the tension between clinicians setting aside time to develop evidence-based practice versus clinicians feeling time-pressures that interfere with evidence-based practice. One participant said:

“But as far as looking into articles or things like that in my practice I don’t really have time for that. We are usually dealing with crisis, you know, case management, medication, talking to psychiatrists, planning all of that stuff and people are so individualized with what they need that I don’t, to be honest, I don’t spend a lot of time with it.” (Bachelor’s; Nursing)

This quote relates the opinion that, after dealing with the various clinical pressures that dominate this clinician’s work time, she does not feel as though she has any additional time to devote to research articles and evidence-based practices. Another clinician stated that, in her work experience, whenever a practice change or evidence-based practice was introduced, most clinicians would rely on the brief in-service or research summary, without consulting any additional information, because of time constraints due to clinical workload. Though clinicians know about evidence-based practices, they reported difficulty in applying and maintaining them due to other competing roles and responsibilities.

Discussion

The overall results of this study reflect the opportunities and challenges faced by interdisciplinary clinicians working in mental health treatment settings in terms of conceptualizing and implementing the principles of evidence based practice. Definitions varied, and there were reports of many different aspects to implementation. Key tensions were evident in implementation of evidence-based practices.

Over the course of the interviews, three definitions of evidence-based practice emerged. The first definition, given by half of the clinicians interviewed, focused on evidence-based practice as research-based literature. This focus on research is significant

in that it is at the core of how most clinicians define evidence-based practice, and is certainly echoed by other literature on the topic in mental health treatment and health care in general (Drake et al., 2001; Torrey et al., 2001; LoBiondo-Wood & Haber, 2005). However, the results of this study showed that “research evidence” could take many forms. Some clinicians spoke of systematic reviews, randomized controlled trials and inclusion in the Cochrane database. Other simply said practices with “some research behind it”. Furthermore, two of the respondents emphasized the importance of broadening the definition of evidence to incorporate clinical expertise or “practice wisdom”. This perspective is in contrast to the privileging of research evidence as the only component of evidence-based practice. Finally, two clinicians interviewed defined evidence-based practice using the Sackett et al. (1996) definition incorporating research evidence, clinical expertise and client wishes. This finding is unique in that it speaks to the original intentions of evidence-based practice even though the definition seems to have changed over 20 years to an increasing focus on research evidence. These contrasting definitions confirm the continued debate over the core of what constitutes evidence-based practice across fields and disciplines.

The clinicians interviewed also reported several components necessary for evidence-based practice implementation. These components include: 1) creating conditions (such as time, opportunity, resources and culture) in which clinicians have the opportunity to engage with evidence-based practices; 2) accessing evidence so that clinicians have to opportunity to receive evidence; 3) motivating practice which determines whether clinicians will engage in training and implement an evidence-based practice; and 4) reflecting critically, by which clinicians make their own assessment of

effectiveness. These components are important to understand because they are clinician-identified components of the evidence-based practice implementation process.

Understanding and using these clinician-identified issues in an integrated knowledge translations strategy could lead to more successful implementation. Some of these results parallel findings reported in the literature about facilitators and barriers to evidence-based practice including: decreased workload requirements and compensation for time spent learning (Hamm et al., 2014); organizational support for clinician innovation (Powell et al., 2013); evidence access and preferred types of evidence (Connors et al., 2015; Allen and Armstrong, 2014); clinician beliefs and behaviours (Barnett et al., 2014; Hetrick et al., 2011), and clinician openness to new treatments (Ashcroft et al., 2011). However, some of these results are more specific and go beyond what is known in the current literature. Clinicians spoke of evidence access to understand the clinical issues or concerns and to provide a clinical context for the implementation of evidence-based practice. This finding is important because it suggests that clinicians are using research evidence for instances outside of specific evidence-based practices. Also, regarding critical reflection clinicians said that they observed some non-evidence-based practices as effective as well. Some others said that assessment of effectiveness of evidence-based practice in mental health treatment were biased or not possible in that mental health treatment is a field with few concrete measurable biometrics and therefore fewer unbiased outcomes. Some clinicians believe that evidence-based practices may not be necessary or even possible because of the nature of the clinical field.

The clinicians interviewed also spoke of tensions they found central to the theme of evidence-based practice. These tensions include: Valuing research evidence versus

clinical expertise, fidelity versus customization, defining roles versus role sharing, and implementing evidence-based practice versus managing clinical workload pressures.

These tensions indicate that clinicians are conflicted in certain areas of integrating evidence-based practice into their clinical practice. Implementation of processes and policies to resolve some of these tensions would reflect a better understanding of the needs of clinicians and could result in more successful implementation.

These results reflect some of the literature on evidence-based practice including: clinician attitudes toward evidence-based practices and use of intuition (Ashcroft et al., 2011; Gaudiano et al., 2011); guidelines and mandated use (Hetrick et al., 2011); practice, time and workload constraints (Bearman et al., 2015; Hamm et al., 2015; Stanhope et al., 2011). However, this study also contains some new and notable results in this area. In the tension between *research evidence valuing clinical expertise*, some clinicians reported on their hope that evidence-based practice would continue to respect the therapeutic relationship and that some clinicians consider clinical expertise as essential as research evidence. The tension between *defining roles versus role sharing* in interdisciplinary mental health treatment settings is consequential in this specific setting and in evidence-based practice implementation in that it can provide an opportunity to recognize the unique contributions of specific disciplines. However, clinicians also report that if there is role sharing or crossover a danger does lie in role blurring and losing professional identity.

The interviews and corresponding results of this research, in addition to similar research conducted and presented on this topic suggests that there is difficulty in implementing evidence-based practices. Although this study has raised some familiar

concerns around evidence-based practice implementation it has also presented some clinician-led solutions. The study results regarding definitions of evidence-based practice suggest that it is important for organizations and clinicians to agree upon common definitions of evidence-based practice before implementation. With agreement on a common definition such as the Sackett et al. (1996) definition, both clinicians and organizations will have a common understanding of the concept of evidence-based practice and may facilitate a move toward improved implementation. The study results regarding components of evidence-based practice implementation suggest that if these clinician-identified components (creating conditions for evidence-based practice, accessing evidence, motivating practice, and reflecting critically) are achieved there may be more successful implementation efforts. The clinician-identified components are significant in that they have been identified by those that would be “users” of the process, and were collected through a discussion of successful implementation. Finally, the results regarding central tensions suggest that it may be important for organization and clinicians to weigh these concerns before attempting evidence-based practice implementation. It is clear from this and other research that time to engage in the evidence-based practice process is a necessary requirement. As discussed earlier it is also important to clarify basic elements such as definitions of evidence-based practice itself and of the evidence-based practice to be implemented. It is also important to clarify roles. Both clinicians and organizations share responsibility in this process. Organizations have the responsibility to support the development of evidence-based practices through elements such as resources, training, time and ongoing support.

Clinicians have the responsibility to learn, practice and implement evidence-based practice, and seek out continued support when needed.

In addition to the research results presented, particularly the clinician identified components of evidence-based practice implementation, clinicians and organizations engaging in evidence-based practice implementation could also employ a knowledge translation strategy to move the process forward. Theoretical frameworks can provide a structure for understanding and communicating complex issues like evidence-based practice. Given our results a framework that embraces the importance of context and culture might be useful. The PARIHS (Promoting Action on Research Implementation in Health Science) Framework (Kitson et al., 1998) was specifically designed for use in the health sciences, and has been updated to provide a guide for the implementation of evidence-based practice (Rycroft-Malone, 2004). The PARIHS Framework has three main elements: evidence (research, clinical experience, client experience), context (culture, leadership, evaluation) and facilitation (purpose, role, skills). Several of these elements coincide with the results from this research, evenly involve both organizational leadership and clinicians in evidence-based practice implementation, and the PARIHS Framework considers the importance of context in implementation.

It still remains that in the larger discourse of evidence-based practice as a whole, the definition of evidence-based practice seems to have shifted from the Sackett et al. (1996) three-legged stool definition comprising research evidence, clinical expertise and client preference in treatment to a focus on solely the research evidence. However, in light of this study Sackett's definition still appears to be applicable and relevant. In this study only half of participants described evidence-based practice as only research-

evidence. Two participants included clinical expertise or “practice wisdom” along with research evidence, and two participants used the Sackett et al. (1996) three-legged stool or “three pillars of evidence” definition. This result reveals that half of participants are considering evidence-based practice to be more than just the research. In the participants’ descriptions of the components of evidence-based practice implementation only one of the identified components, *accessing evidence* touches on research evidence. One, *creating conditions*, has to do with implementation context and the others, *motivating practice* and *reflecting critically*, have to do with clinical practice and touch on client participation. In addition, the Sackett definition of evidence-based practice could help in resolving the four central tensions to evidence-based practice identified in this study. The first tension, *valuing research evidence versus clinical expertise* pits two legs of the three-legged stool against one another. The use of the Sackett definition combining both, would eliminate this tension. The use of the Sackett definition regarding the second tension, *fidelity versus customization*, would create a different conversation about how to implement practices in regards to clinical expertise, client preference and perhaps even the implementation context. In regard to the third tension, *defining roles versus role sharing*, the use of Sackett’s definition would take into account the specific clinician’s practice knowledge as part of the evidence-based practice implementation context. Finally, the use of the Sackett definition regarding the fourth tension, *implementing evidence-based practice versus managing clinical workload pressures*, would look to balance the needs of the clients in light of the implementation context.

When taken as a whole, the responses of the participants are accepting of “evidence-based practice”. However, they reflect the opinion that evidence-based

practice is comprised of more than just research evidence. Research evidence may not be relevant to the average clinician's day-to day-work or may not be pragmatic in an environment where emergent client needs take precedent. However, research evidence combined with clinical expertise and client preferences, as in the Sackett definition of evidence-based practice and the implementation context (time, opportunity, resources, culture/environment) form a more holistic picture of evidence-based practice. As noted in the results, one participant expressed the opinion that although the structure of evidence-based practice provides guidelines it is not the only piece necessary and the therapeutic relationship and other less quantifiable factors are also a necessary part of successful treatment.

In consideration of the results of this study the field of evidence-based practice in interdisciplinary mental health treatment should refocus on the concept of evidence-based practice as comprising more than just research evidence. A greater effort should be made to put forth the Sackett et al. (1996) definition of evidence-based practice comprising research evidence, clinical expertise and client wishes, in addition to context. This process could also include making the definition part of the organizations mission statement. This process would also engage more clinicians and lead to a better reflection of what is actually happening in clinical practice. Again, as noted in the results one participant expressed concern that the research evidence aspect of evidence-based practice continues to become the sole focus and the other two pieces, clinical expertise and client preferences, will continue to diminish and eventually be forgotten.

Implications for Practice

The target audience for this research is both clinicians and organizations as both play significant roles in the evidence-based practice implementation process. The messaging of these results are the same for both clinicians and organizations as collaboration between the two is required for implementation. These findings could lead to organizations and clinicians leading the development of a common understanding of evidence-based practice before undergoing implementation. They could also lead to organizations and clinicians planning for evidence-based practices beyond education and training through to implementation, supervision and fidelity monitoring. If the process of coordinating the above is not realistic or attainable these results could also lead to organizations reconsidering their use of the term “evidence-based practice” to describe their services. These findings could lead to organizations examining how to include appropriate evidence-based training and follow up within a busy clinician workload. Finally, they could lead to organizations allotting appropriate resources to support not only the education and promotion of evidence-based practices, but their implementation, update and continued practice.

Limitations

One limitation of this study is the scope of clinicians surveyed. This study focused on interdisciplinary mental health clinicians working in outpatient community mental health treatment settings in Ontario, Canada. Future research could expand to interdisciplinary mental health clinicians working in inpatient settings and anywhere outside Ontario, Canada. This addition would be important as clinicians working in inpatient settings or other areas of Canada might have different definitions, implementation strategies, successes, and challenges. There may be different information

that could assist implementation efforts in the population of this study and add to the greater body of knowledge of evidence-based practice implementation worldwide.

Another limitation of this study is the number of respondents. There were only 8 interviewees. The sample size goal was not achieved. Future research could include a longer sampling period to receive more responses. In addition, the perspectives of clinicians at the diploma/certificate education level were represented in the initial quantitative surveys (Papers #1 & #2) but not in this qualitative study. Representation from the same groups across studies could also strengthen the link between the studies.

Conclusion

This study described: 1) how clinicians define evidence-based practice, 2) how clinicians perceive the implementation of evidence-based practice, and 3) what clinicians' knowledge, beliefs and practices are regarding evidence-based practice. The study confirmed several aspects of evidence-based practice in mental health treatment literature including: the research-focused definition of evidence-based practice, the need for conditions such as time and resources, access to evidence to promote evidence-based practice implementation, the struggle between valuing research evidence versus clinical expertise in defining evidence-based practice, and implementing evidence-based practice versus managing clinical workload pressures for clinicians. This study also extended aspects of evidence-based practice in mental health treatment literature such as: revisiting the Sackett et al. (1996) definition of evidence-based practice, looking at aspects of motivating practice, critical reflection to promote evidence-based practice implementation, the struggles around fidelity versus customization of evidence-based

practices, and defining roles versus role sharing among clinicians in interdisciplinary settings.

Table 1

Codebook

1. Defining Evidence-Based Practice	
<i>1. Using research-based literature</i>	Evidence-based practice as using research-based literature, which are practices confirmed by literature, such as peer-reviewed journal articles, text books and databases
<i>2. Using clinical expertise</i>	Emphasizing the importance of clinical expertise as part of evidence-based practice, explaining that it involves incorporating the clinicians' practice wisdom and/or experiences
<i>3. Using the three-legged stool</i>	Evidence-based practice as using current best research evidence, clinical expertise, and client wishes in making decisions about individual client treatment

2. Components of Evidence-Based Practice Implementation	
<i>1. Creating conditions for evidence-based practice</i>	Time, opportunity, resources and overall organizational culture as

	necessary conditions for the implementation of evidence-based practice
<i>2. Accessing evidence</i>	The various methods clinicians use to acquire evidence-based practice related information
<i>3. Motivating practice</i>	Drivers for upgrading or improving clinical practice, such as competition with other clinicians, pressure from management and goals for self-improvement
<i>4. Reflecting critically</i>	Analytical contemplation of evidence effectiveness

3. Central Tensions in Evidence-Based Practice	
<i>1. Valuing research evidence versus Clinical expertise</i>	Maintaining strict adherence to research evidence versus acknowledging that clinical experience and meaningful interactions with clients lead to positive outcomes in client treatment
<i>2. Fidelity versus Customization</i>	Implementing evidence-based practices

	<p>as structured interventions that do not allow for deviation or flexibility versus modifying evidence-based practices as needed</p>
<p><i>3. Defining roles versus Role sharing</i></p>	<p>Clinicians defining their own roles as implementers of discipline-specific evidence-based practice versus clinicians who feel that clinicians of various disciplines working together share similar responsibilities and research evidence, including evidence-based practices</p>
<p><i>4. Implementing evidence-based practice versus Managing clinical workload pressures</i></p>	<p>Clinicians setting aside time to develop evidence-based practice versus clinicians feeling time-pressures that interfere with evidence-based practice</p>

Appendix

Interview Questions

1. What are your thoughts about evidence-based practices? How does it inform what you do in your day to day clinical work?
2. How do you define evidence-based practice?
3. How do you access information (articles, databases, etc.) about evidence-based practice? If so, what? How? How often? If not, why not?
4. Do you think evidence-based practices are effective? If so, why? If not, why not?
How do you know this?
5. Do you know the evidence-base practices for your discipline in the treatment of your clinical population?
6. Do you implement the evidence-based practices for your discipline into your daily practice? If so, how?
7. Do you think that other disciplines in your workplace implement evidence-based practices into their daily practice? If so, how do you see this?

8. Do you think that your workplace supports the use of evidence-based practices? If so, why? If not, why not?

9. Do you think that your workplace supports the development of evidence-based practices (money/time/training)? If so, how? If not, explain.

10. What do you think the future holds for evidence-based practices?

Chapter Five - Conclusion

Evidence currently supports the effectiveness of many mental health interventions but little change has been documented in improved mental health outcomes for mental health populations (Fixsen et al., 2005; Drake et al., 2001; Torrey et al., 2001). There is a gap between evidence-based research findings and changes in practice and outcomes in mental health treatment. Knowledge may have increased but that has not led to an increase in evidence-based practice implementation. The goal of the research reported in this thesis was to address this knowledge gap. Through the use of a mixed methods research design these studies examine how mental health professionals working in interdisciplinary treatment settings define and implement evidence-based practices.

This research used a sequential explanatory mixed methods design (Tashakkori and Teddlie, 2003). In this type of model data are collected and analyzed sequentially with a large-scale quantitative study taking place first, followed by a smaller qualitative study. The data are integrated during interpretation. Chapters Two and Three were quantitative in nature and focused on the interpretation of results from evidence-based practice related survey data. Chapter Four was qualitative in nature and built on survey results from Chapters Two and Three to focus on the interpretation of evidence-based practice related interview data from key informants. The mixed methods design was an appropriate choice for this research project as it allowed for greater explanation of the topic using different lenses. A mixed method yields a greater range in data collection to increase validity and to ensure that the questions were answered from different perspectives. A mixed method also uses triangulation of data sources and methods to obtain both breadth and depth of understanding of the issues. The qualitative interviews

in Chapter 4 are based on items and results from the quantitative surveys from Chapters 2 and 3. Placing the qualitative analyses after the quantitative provided an opportunity to examine the clinician experiences of evidence-based practice to gain ideas about implementation. This strategy became particularly important when the quantitative analyses were unable to explain much of the variance found in the behavioural outcome on the survey results.

Chapter Summaries

In Chapter Two, according to the results of the Knowledge, Attitude and Behaviour Questionnaire-modified (KABQm), survey respondents reported high knowledge scores regarding evidence-based practices and a moderately high attitude scores toward evidence-based practices. Thus, regarding knowledge respondents generally agree about the importance of and have confidence in the elements of evidence-based practice and have a generally positive opinion of evidence-based practice. However, respondents reported only moderate outcomes scores from evidence-based practices and low behaviour scores related to evidence-based practices. These findings indicate that respondents believe that evidence-based practice has a moderate impact on their own clinical practice. For behavioural changes, respondents reported that they access evidence infrequently (approximately once per month to not at all). In response to open-ended questions about not using evidence-based practices the most common responses centred on limited time and access to materials and resistance to change within the workplace. When the KABQm scores were analyzed by education level, clinicians with more education scored higher across every category (Knowledge, Attitude, Outcome and Behaviour). None of the KABQm categories showed any statistically significant

difference across professions. In response to the Evidence-Based Practice Interdisciplinary Workplace Culture Survey (EBP-IWCS) several respondents agreed that research evidence, clinical expertise and client perspectives are all components of evidence-based practice. Respondents indicated that they were aware of and implemented evidence-based practices for their own discipline but were less certain about practice for other disciplines in their workplace. Finally, respondents somewhat agreed that their workplaces were supportive of evidence-based practices. In open-ended comments on the use of evidence-based practices in interdisciplinary mental health treatment settings, several respondents said that there was no funding or time to access evidence-based practice resources in their workplace.

In Chapter Three, again utilizing results from the KABQm, 48% of perceived outcome of evidence-based practice can be explained by level of education, profession, knowledge of evidence-based practice and attitude toward evidence-based practice. In contrast, only 15% of evidence-based practice related behaviour change was explained by knowledge of evidence-based practice. Thus, a large portion of behaviour change remains unexplained. This conclusion suggests that outcomes/impact are easier to understand and implement than behaviour change. Behaviour change may require addressing several complex clinician and organization-based factors. Literature suggests that behavior change can occur on both the individual and organizational level but only with long-term commitment and organizational leadership as well as organizational culture change (Fearing et al., 2014; Novins et al., 2013; Hovemand & Gillespie, 2010; Aarons et al., 2012 & 2009).

In Chapter Four, utilizing data from interviews half of the respondents defined evidence-based practice as practices supported by research evidence. The other half defined evidence-based practice as incorporating a combination of the three legs of the stool: clinical expertise, client preferences and research evidence. The respondents identified four components of evidence-based practice implementation, as: creating conditions for evidence-based practice (time, opportunity, resources and culture), accessing evidence, motivating practice, and reflecting critically. Finally four tensions central to evidence-based practice arose. These tensions included valuing research evidence versus clinical expertise, fidelity versus customization, defining roles versus role sharing and implementing evidence-based practice versus managing clinical workload pressures.

The State of Evidence-Based Practice in Interdisciplinary Mental Health Treatment

The findings of this research demonstrate that the dominant characteristic for many respondents regarding evidence-based practice remains research evidence. However, some of these same participants also acknowledge that evidence-based practice includes all aspects of the Sackett et al. (1996) original definition, research evidence, clinical expertise and client wishes. This finding is similar to other research that found a focus of evidence-based practice predominately on research evidence (Drake et al., 2001; Torrey et al., 2001; LoBiondo-Wood & Haber, 2005). With such a focus, clinician behaviours are primarily centred on the retrieval and study of research articles and not on the consideration of practice wisdom, the experience of the client or the implementation context. This misconception about evidence-based practice leads to an incomplete implementation of evidence-based practice and a process of practice that excludes the

clinician, the client and the practice setting. These characteristics are three significant components of practice and implementation. If the focus is entirely on the research evidence for the practice itself it is not surprising that implementation attempts do not succeed.

This research indicates that the focus on research evidence in evidence-based practice is still limiting change in practice. Although knowledge scores are high this knowledge does not lead to a significant impact on outcome scores and has little impact on behaviour scores. Greater use of the Sackett definition of evidence-based practice with considerations given to other issues such as implementation context, could lead to an increase in uptake as it targets clinicians concerns other than solely the research evidence. In this study clinicians have reported that they are comfortable with research evidence as a guide but not as the sole component of evidence-based practice. This conclusion indicates that there is a need to focus on the broader definition of evidence-based practice.

The study results regarding knowledge, attitude, outcome and behaviour show a need to focus not only on training and measuring outcome but also on behavior change and sustainability of that change over time. “One off” training and workshops may not develop and sustain a change to an evidence-based practice. Behavioural change may require long-term training and support as well as cultural changes within the organization. In researching evidence-based practice implementation Edmunds (2013) found that combining training with consultation and ongoing support was a more promising strategy than training alone. Nadeem et al. (2013)^{1,2} also reported that ongoing training and consultation is critical and that one time training for evidence-based

practice is not effective. According to these research findings and related literature evidence-based practice implementation involves training and practice change on the part of the individual clinician but also commitment and support on the part of the organization. This process of change takes place over time with ongoing support.

The study results indicate higher levels across all domains of evidence-based practice measured by education but not by profession. A clinician's initial level of education appears to impact the propensity for uptake of evidence-based practices. Within interdisciplinary mental health treatment settings clinicians in any given workplace will have varying levels of education. Additional research suggests that interprofessional education after initial education and in the workplace, may improve outcomes. Heath et al. (2015) found that interprofessional education can improve effective client treatment. Malt (2015) discovered that interprofessional education improves treatment outcomes and overall satisfaction. Brennan et al. (2014) found that interprofessional education led to shared group learning and a shared work perspective. Therefore, the results and related literature support the use of interprofessional education to improve the level of understanding and implementation of evidence-based practices. However, results from the interviews and unique to this study report that there is a tension between defining roles and role sharing among interdisciplinary clinicians working in these settings. Some clinicians feel that those working in interdisciplinary treatment settings at times take on roles or evidence-based practices of other disciplines, and run the risk of losing their specific professional role. Other clinicians report that those working in interdisciplinary settings are not seen as one specific discipline and that they perform many of the same tasks. This research indicates that there are varying

opinions as to whether research evidence related to interdisciplinary roles should overlap or be shared. However, other elements such as inherent differences in professions or conflicts that develop between various mental health treatment professionals working together in the same setting may also have an impact on this tension. Understanding clinician opinions regarding roles on an interdisciplinary treatment team can positively impact how evidence-based practices are implemented, and therefore impact behavioural change.

This research also sought to better understand clinician opinions and understanding of evidence-based practice. Clinicians reported specific opinions on the definition, components of implementation and central tensions of evidence-based practices. Ashcroft et al. (2011) reported that clinician attitude and belief in negative outcomes of evidence-based treatments were associated with low clinician openness to new treatments. Gaudiano et al. (2011) discovered that clinicians who relied heavily on intuition had negative attitudes toward and willingness to use evidence-based treatments. Hetrick et al. (2011) found that clinician attitudes and beliefs about evidence-based practices were a key barrier to the implementation of guideline recommendations. In this study, clinicians at all levels of education have relatively high levels of knowledge and a generally positive opinion of evidence-based practice. Given previous research findings about the impact of attitude, the presence of positive attitudes can support evidence-based practice. Attention to attitude remains important since the opinions and perceptions of clinicians may or may not coincide with the opinions of the organization. Such potential differences in opinion can lead to challenges in implementation particularly within a complex, community-based interdisciplinary setting.

This research uniquely focuses on outpatient interdisciplinary mental health treatment settings. Research has shown that understanding context is central to evidence-based practice implementation (McCormack et al., 2013; Ward et al., 2009a; Ward et al., 2009b; Jacobson et al., 2003; Kitson et al., 1998). Some evidence-based practices within mental health treatment may not be appropriate for or have evidence to support use in a particular setting. Practices that have research evidence in one particular population (i.e.: Cognitive Behavioural Therapy for Psychosis) may also have evidence to support its implementation in a particular setting (i.e.: outpatient or delivered in group format) but may not meet the particular parameters of the interested clinician or organization. Clinicians may be asked by the organization to implement evidence-based practices that do not have evidence or are not appropriate for their context. Conversely, clinicians may want to implement evidence-based practices in their practice settings and their organizations may not believe that they are appropriate for the context.

High knowledge scores, low behaviour scores

Knowledge and attitude scores regarding evidence-based practice within this population are high while scores for outcome are moderate. Clinicians indicate that they know and have positive beliefs about evidence-based practice. Clinicians do not indicate as great an impact of evidence-based practice within their practice. This finding is supported by similar literature regarding knowledge, attitude and outcomes in evidence-based practice. In regard to knowledge Powell et al. (2013) researched clinician experiences in implementing evidence-based practice and found that knowledge was one of the most significant facilitators. In regard to attitude Stirman et al. (2013) and Stanhope (2011) both studied evidence-based practice implementation and found that

clinician attitude was an important part of the process. In regard to outcome Barber and Weinberg (2010) discussed the significance of outcome related to a specific evidence-based practice intervention.

A focus on evidence-based practice over the past two decades has resulted in improved knowledge and attitudes towards the use of evidence in practice. However, findings from this research indicate low levels of change in behavior related to evidence-based practice. This focus is supported by similar literature regarding the complexity of behavioral change towards evidence-based practice. Johnson and May (2015) identified factors such as restructuring of practice and relationships as well as modifying norms and expectations to improve behaviour change in health care. Angus et al. (2013) found that the implementation of behavioural change theories impacted behaviour change. Edwards et al. (2012) found that social and cultural factors also had an impact on implementation and behaviour change. Clinicians may focus on the same practices for years, with little incentive to change to more evidence-based practices. Concerns about time and resources continue to dominate the reasons for poor implementation as also reported by Stirman et al., 2013, Edmunds et al., 2013, and Stanhope et al., 2011.

Higher levels of knowledge and attitude does not automatically lead to changed clinical behavior. Organizations and clinicians when implementing an evidence-based practice change can consider the implementation of a behavioural change model, including long-term support and fidelity monitoring. The use of knowledge translations models may aid in addressing behaviour change in evidence-based practice implementation. The PARiHS Framework (Promoting Action on Research Implementation in Health Services, Kitson, Harvey & McCormack, 1998) accounted for

the applicability of the research evidence but also implementation context (culture and relationships) and facilitation (support, attitudes and habits). By using this framework and identifying its components that are present and those that need support, behavioural changes can be enhanced. Communities of practice (Wenger, 2006) which engage individuals in collective learning and problem solving can be used within this framework to operationalize the components of an evidence-based practice intervention.

Factors influencing outcome of evidence-based practice

This research also showed that almost half of the perceived outcome, or impact, of evidence-based practice can be explained by the key factors: level of education, profession, knowledge of evidence-based practices and attitude regarding evidence-based practice. According to the results of this study outcome could potentially be improved by changing knowledge and behaviour related to evidence-based practice implementation. This change can be accomplished by providing improved training regarding evidence-based practices for those at lower levels of education or incorporating more education about evidence-based practices into the curriculum at all education levels.

Factors influencing evidence-based practice behaviour

This research also showed that about 15% of behaviour related to evidence-based practice can be explained by one key factor: knowledge. The analysis did not identify other factors that explain evidence-based practice behaviour and very little of variance. Other potential influences on evidence-based practice behaviour could include: clinician decision-making (Baker-Ericzen et al., 2015), clinician choice/autonomy (Williams et al., 2013), clinician response to change (Stirman et al., 2013; Stanhope et al., 2011), impact of clinician workload (Stirman et al., 2013), the use of practice leads and coaches

(Fearing et al., 2014), training consultation and ongoing support (Edmunds et al., 2013; Nadeem et al., 2013¹; Nadeem et al., 2013²), and fidelity monitoring, supervision and improving organizational culture (Novins et al., 2013). As behavior change is a very complex issue there is a need to examine multiple factors (Johnson and May, 2015). However, according to the results of this study knowledge does have a direct impact on behaviour. This finding is logical given that knowledge is the initial piece for any practice change.

Knowledge

Knowledge of evidence-based practice is an important factor across all three studies. In examining knowledge the KABQm focuses on research evidence, access to research and its appraisal. Knowledge of evidence-based practice received the highest mean score across all domains of the KABQm. In addition, a higher level of education also results in higher means scores across all domains of the KABQm. Knowledge of evidence-based practice is also identified as having an impact on both outcome and behavior change. Finally, in Chapter Four (Paper #3) half of the participants defined research evidence as the major definition of evidence-based practice (the other half included clinical expertise and Sackett's three-legged stool definition).

The prominence of valuing research evidence versus clinical expertise presented itself as a central tension for mental health practitioners. In the context of this research and this specific population of clinicians, knowledge of evidence-based practice is predominately viewed as research evidence and other information about evidence-based practice. Respondents appear to acknowledge that research evidence represents the means by which specific evidence-based practices are explored and explained. Other

aspects of evidence-based practice such as clinician expertise and client wishes are more challenging to examine and explore. Literature about knowledge and evidence-based practice in specific mental health treatment populations have explored this concept as well. Starin et al. (2014) observed that the training of community mental health practitioners was successful in evidence-based practice implementation. Allen and Armstrong (2014) investigated the types of information required before evidence-based practice implementations. They found that case studies and clinical trials were the most preferred types of evidence. LoBiondo-Wood and Haber (2005) describe evidence-based practice with a heavy influence on research evidence.

The concept of evidence-based practice as more than research evidence (i.e.: Sackett's three-legged stool) is not fully explored in the KABQm. While the KABQm results show that knowledge is high this finding does not indicate that respondents fully understand or endorse a broad definition of evidence-based practice. Within the interviews about half of the respondents focused on evidence-based practice being more than just research evidence. Although knowledge as measured by the KABQm, is high, these scores may be based on a misunderstanding about evidence-based practice that is limiting implementation and changes in behavior. Given the view that evidence-based practice is only research evidence clinicians may read research but are not able to understand its findings or do not have enough information from journal articles to implement the findings. Based on the view that evidence-based practice is only research evidence clinicians may believe that change is not possible within their current clinical context.

Access

Evidence access refers to whether or not clinicians have access to research evidence and other evidence-based practice resources. Respondents to the survey frequently added limited access to evidence-based practice related resources as a response to both the KABQm and the EBP-IWCS. However, access to evidence-based practice resources did not have a significant influence on outcome or behavior of evidence-based practice. Interview participants did identify access to evidence as a component of evidence-based practice implementation. Although access may not be a significant influence on behavioural change, access to research evidence and other evidence-based practice resources remains one of the first steps in ensuring that clinicians receive knowledge about evidence-based practice. This finding is echoed by similar literature on the topic within specific mental health treatment populations. Connors et al. (2015) discovered that clinicians did not think they had access to information they needed to implement evidence-based practice. Barnett et al. (2014) found that the biggest clinician perceived barriers to evidence-based practice implementation was limited access to evidence.

The KABQm has 1 out of 27 statements that address access (“It is easy to find the research”) in the Attitude subscale. In measuring behaviour the KABQm asks “How frequently do you access” clinical research evidence, not “Do you have access” to clinical research evidence. In the KABQm there is an assumption that clinicians have access to evidence-based practice resources. However, demographic information from this research study found that only 59% of respondents had access to a library in their clinical setting, and only 58% of respondents had access to full text articles in their clinical setting. The KABQm does not specifically ask whether clinicians have access to

research evidence and open-ended and interview responses indicate that there is limited or no access to research evidence. Poor implementation results in the form of behaviour change as measured by measures such as the KABQm may be influenced by limited access to research evidence.

Time

Finally, time for evidence-based practice was an important result across the studies. Time for evidence-based practice refers to whether or not clinicians believe that they have time to engage in evidence-based practice in light of other workplace duties. In the survey results limited time for evidence-based practices was often added as a response to both the KABQm and the EBP-IWCS. Interview respondents identified time for evidence-based practice as a necessary condition for successful evidence-based practice implementation. Time was also identified as a central tension (implementing evidence-based practice versus managing clinical workload pressures). Whether or not clinicians feel as though they have time to engage in research evidence or other aspects of evidence-based practice is crucial to clinician uptake of evidence-based practice. Similar studies of specific disciplines providing mental health treatment found the need for compensation for time spent learning (Hamm et al., 2014), awareness of time constraints for training (Herschell et al., 2014), limited time for training (Nadeem et al.¹, 2013), and time limitations for evidence-based practice (Legare et al., 2011). This research confirms these same findings for clinicians working in interdisciplinary mental health treatment.

This research study used the KABQm to measure low behaviour scores related to evidence-based practice. The KABQm uses frequency of evidence-access to indicate evidence-based practice attitude but not behaviour. The KABQm does not adequately

address time in the evidence-based practice process. There are 2 out of 27 statements (“Evidence-based practice takes too much time” and “I don’t use evidence-based practice because I don’t have time”) that address time. Both statements are part of the 12-item Attitude subscale. Statements about limited or no time to access evidence-based practice in light of other workload pressures are among the most frequent responses to the open-ended responses in the survey. All clinicians interviewed for Chapter #4 (Paper #3) listed time as a necessary component of evidence-based practice implementation. Poor implementation results in the form of behaviour change as measured by the KABQm may be influenced by the amount of time that clinicians perceive they have to dedicate to ensuring evidence-based practice.

Implications of these Findings for Evidence-Based Practice Implementation

These research findings have implications for several areas of interdisciplinary mental health treatment. For clinicians, ensuring evidence-based practice may rely not only on workshops for the implementation of evidence-based practice but also include sustained involvement, support and feedback from their organization. Clinicians and organizations can develop a common understanding of evidence-based practice before undergoing implementation. Examples of strategies that can assist clinicians and organizations in evidence-based practice implementation are: improving clinician knowledge about the true definition of evidence-based practice (Sackett et al., 1996); developing resources to assist clinicians in understanding research findings (Connors et al., 2015; Barnett et al., 2014) and clinicians and organizations working together toward implementation (Fearing et al., 2014; Novins et al., 2013).

These findings point to the need for organizations to acknowledge that implementation of evidence-based practices goes beyond education and training and there is a need to focus on behaviour change. For implementation of evidence-based practices to be successful, they may have to become more involved in initial (money, time, workload management) and ongoing (training, supervision, ongoing consultation) support of their clinicians. In addition, organizations could develop and implement clinical pathways and fidelity measures to ensure that evidence-based practice implementation is occurring.

Organizations can focus on how they use the term evidence-based practice to describe their services. At times, organizations use the term “evidence-based” with a specific definition (i.e.: research evidence) or regarding a specific practice (i.e.: Cognitive Behavioural Therapy for Psychosis) without knowledge that there is another more comprehensive meanings of the term.

These results also have implications for training. Wilberforce et al. (2013) studied interdisciplinary treatment in community mental health and found that the growth in interprofessional clinicians who were hired without professional registration raised concerns about the presence relevant skills. Individuals with lower levels of education show the lowest scores across all domains of evidence-based practice. Education for those specific disciplines can be increased to have a greater focus on evidence-based practice to help diminish such differences by education level over time. As literature suggests training can also be adjusted to accommodate for sustained implementation and supervision over a longer period of time (Edmunds et al., 2013; Nadeem et al., 2013^{1,2}). As the focus of this study is on interdisciplinary treatment, trainers and organizations

should focus on interprofessional education within each treatment setting (Heath et al., 2015; Combs et al., 2014).

Policy developers often utilize evidence-based research when creating policy (Upshur, 2005). Policy developers recognize the label of “evidence-based” as having a greater chance of success, therefore ensuring quality. These results can better direct policy makers to include appropriate definitions of evidence-based practice, consider the context for evidence-based practice implementation, select effective types of training and implementation sustainability models, and make adjustments for levels of education. Sandstrom et al. (2014) and Aarons et al. (2009) reported that evidence-based practice implementation began with support from various levels including policy makers.

This study may also have some implications for research as it is used a mixed methods model with quantitative methods before qualitative methods. This approach is not often used but was helpful to further explore the depth of what was uncovered through the quantitative research.

Strengths, Limitations and Future Research

One strength of the study is the use of both quantitative and qualitative methods to explore the research question. The use of mixed methods allowed for greater depth and exploration of the findings. The qualitative research study complemented the quantitative survey, shed light on gaps within the KABQm and illuminated potential strategies for evidence-based practice implementation. Another strength of the study is the use of an interdisciplinary sample of clinicians. This type of sample allows for greater generalizability to other clinician populations, and a more accurate portrayal of actual clinical settings.

One limitation of this study is the scope of clinicians within the sample. This study focused on clinicians working in outpatient community mental health treatment in Ontario, Canada. Future research could expand to interdisciplinary mental health clinicians working in inpatient settings and outside this location. Another limitation of this study is the number of respondents in the qualitative interviews. Future research could include a longer sampling period to receive more responses and expand the respondent population.

Conclusion

The purpose of this research was to examine how interdisciplinary mental health treatment professionals define and implement evidence-based practices. This research explored how disciplines working in interdisciplinary mental health treatment 1) define evidence-based practice, 2) report on factors influencing the implementation of evidence-based practices, and 3) perceive the promoters of and barriers to evidence-based practice implementation. Factors that explain the implementation of evidence-based practices were examined. As well, the experiences of clinicians with evidence-based practice were explored through respondent interviews.

According to the results of the Knowledge, Attitude and Behaviour Questionnaire-modified (KABQm), survey respondents reported high knowledge scores regarding evidence-based practices and a moderately high attitude scores regarding evidence-based practices. However, respondents reported moderate outcome scores from evidence-based practices, and low behaviour scores related to evidence-based practices. Approximately half of the perceived outcome of evidence-based practice can be explained by level of education, profession, knowledge of evidence-based practice and

attitude toward evidence-based practice but only 15% of evidence-based practice related behaviour change was explained by knowledge of evidence-based practice. Finally, utilizing data from interviews half of the respondents defined evidence-based practice as practices supported by research evidence. The other half defined evidence-based practice as incorporating clinical expertise and as the Sackett et al. (1996) three-legged stool. The four components of evidence-based practice implementation elicited by the respondents include: creating conditions for evidence-based practice (time, opportunity, resources and culture), accessing evidence, motivating practice, and reflecting critically. This result means that respondents feel these components are necessary for successful evidence-based practice implementation. The components not only include the knowledge access but elements for sustaining and growing practice as well. The data from the respondents also brought forth four tensions clinicians found central to evidence-based practice, which include: valuing research evidence versus clinical expertise, fidelity versus customization, defining roles versus role sharing and implementing evidence-based practice versus managing clinical workload pressures. This result means that according to respondents there are certain specific conflicts central to the process of evidence-based practice implementation which clinicians struggle with and make the implementation of evidence-based practices difficult.

The results suggest that acknowledgement of a definition of evidence-based practice encompassing research evidence, clinical expertise and client preferences could assist in moving evidence-based practice implementation forward. The results also suggest a need to focus on evidence-based practice behaviour change, sustainability over time, and implementation context. A key factor influencing behaviour change in

evidence-based practice is level of education. This study also highlighted the need to focus on long-term change to create a culture for evidence-based practice, and support for implementation. An increase in knowledge of a broader definition of evidence-based practice was found to be important. Finally, this research also illustrated the need to focus on behavioural change by developing evidence-based practice clinical pathways, monitoring, decreasing barriers and supporting development.

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