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## Assessing the strengths of mental health consumers: A systematic review

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## Assessing the strengths of mental health consumers: A systematic review

### Abstract

Strengths assessments focus on the individual's talents, abilities, resources, and strengths. No systematic review of strengths assessments for use within mental health populations has been published. The aims of this study were to describe and evaluate strengths assessments for use within mental health services. A systematic review identified 12 strengths assessments (5 quantitative, 7 qualitative). The Strengths Assessment Worksheet (SAW) was the most widely utilized and evaluated qualitative assessment. Psychometric properties of the assessments were assessed against set quality criteria. Data on psychometric properties were available for 4 measures. The Client Assessment of Strengths, Interests and Goals (CASIG) had the strongest psychometric evidence. The SAW and CASIG assessments can be tentatively recommended within clinical practice, although the evidence for all strengths assessments is currently limited. To describe the content of the strengths assessment, the items used to operationalize the concept of strengths in each assessment were extracted and themed. Twenty-four themes were identified and organized into 3 overarching categories: individual factors, environmental factors, and interpersonal factors. These categories form the basis of an empirically based definition of strengths that could be used as a conceptual foundation for new clinical assessments.

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## **Assessing the strengths of mental health consumers - systematic review**

Strengths assessments focus on the individual's talents, abilities, resources and strengths. No systematic review of strengths assessments for use within mental health populations has been published. The aims of this study were to describe and evaluate strengths assessments for use within mental health services. A systematic review identified 12 strengths assessments (five quantitative, seven qualitative). The Strengths Assessment Worksheet (SAW) was the most widely utilized and evaluated qualitative assessment. Psychometric properties of the assessments were assessed against set quality criteria. Data on psychometric properties were available for four measures. The Client Assessment of Strengths, Interests and Goals (CASIG) had the strongest psychometric evidence. The SAW and CASIG assessments can be tentatively recommended within clinical practice, although the evidence for all strengths assessments is currently limited. To describe the content of the strengths assessment, the items used to operationalize the concept of strengths in each assessment were extracted and themed. 24 themes were identified and organized into three overarching categories: individual factors, environmental factors and interpersonal factors. These categories form the basis of an empirically-based definition of strengths that could be used as a conceptual foundation for new clinical assessments.

**Key words:** Clinical assessment, Psychometric testing, Adult mental health services, Systematic review

Mental health services have traditionally focused on deficit amelioration rather than on the amplification of strengths, talents and abilities. Both the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 2000) and the International Classification of Diseases (ICD; World Health Organization, 2007) provide taxonomies of symptoms and other deficits, whilst referral forms to mental health services commonly focus on the needs rather than strengths of the individual (Cowger, Anderson & Snively, 2006; Synder, Ritschel, Rand & Berg, 2006). Some have characterized the practice of clinical psychology as having psychopathology (abnormal behavioral and emotional conditions) as a focus and being based on the assumption that clinical problems differ in kind, not just degree, from normal problems in non-clinical populations. Within this view, psychological disorders are analogous to biological or medical diseases in residing somewhere inside the individual (Barone, Maddux, & Snyder, 1997). The clinician's task is then to identify (diagnose) the disorder (disease) inside the person (patient) and to prescribe an intervention (treatment) that will eliminate (cure) the internal disorder (disease). This means that *"the language of clinical psychology remains the language of medicine and pathology – what may be called the language of the illness ideology"* (Maddux, 2002 p. 14). In contrast, a strengths-based approach involves a balanced assessment of both the needs and strengths of the individual (Lopez & Synder, 2003). This approach commonly focuses not only on the individual and their interpersonal qualities (Hatcher & Rogers, 2009) but on their environment as well (Saleebey, 2006).

### **Strengths Based Approaches within Mental Health**

A strengths-based approach to practice is not new. It featured prominently in the work of humanistic psychologists such as Carl Rogers and Abraham Maslow, both of whom focused on the attainment of an individual's full potential through their theories of the fully functioning person (Rogers, 1961) and self-actualization (Maslow, 1954). More

recently, social workers, occupational therapists and positive psychologists have all advocated the use of a strengths-based approach to practice. Within current mainstream clinical psychology, guidance about incorporating a focus on client strengths into psychological interventions and general practice has started to emerge (Kuyken, Padesky & Dudley, 2009; Rashid & Ostermann, 2009). Furthermore, the contribution of a strengths-based approach within mental health services has begun to be evaluated (Chopra et al. 2009; Rashid & Ostermann, 2009). The most robust evaluation to date has involved the Strengths Based Case Management (SBCM) for people with severe mental illness. A strengths-based approach to case management focuses on the relationships between staff and consumers, prioritizes strengths over deficits, is consumer led and actively promotes an advocacy approach to resource acquisition. Studies of SBCM have been conducted and will be reviewed in the results section of the present study. Briefly, this research, which has included a limited number of randomized controlled trials (RCT) and quasi-experimental designs, has reported a range of positive outcomes including reduced hospitalization and increased social support (Rapp & Goscha, 2006), although the studies are limited by a number of factors including sample size.

Within positive psychology, there are a number of empirically evaluated interventions including positive psychotherapy (Seligman, Rashid & Parks, 2006), whereby a strengths perspective is used to identify and amplify the individual's capabilities and resources throughout the therapeutic process. Throughout the intervention, positive emotions and the individual's existing assets are targeted instead of symptoms and/or problems, with the main focus on developing new strengths and resources. (Seligman, Rashid & Parks, 2006). Beneficial outcomes have included reduced depression scores (Lopez & Edwards, 2008) fewer visits to health centers (Duckworth, Steen & Seligman 2005) and increased ratings of happiness (Seligman, Steen, Park & Peterson 2005). Furthermore, these

findings have been demonstrated in a number of intervention trials, including a large RCT of internet-based happiness exercises versus a placebo control (Seligman, Steen, Park & Peterson 2005). Research has also demonstrated that individual scores on different strengths dimensions can be linked to variations in outcome, suggesting that certain strengths may be a target for clinical intervention. For example, individuals in the general population who score higher on measures of interpersonal strengths have been shown to have better life outcomes and fewer interpersonal problems (Hatcher & Rogers 2009). However, despite the promising nature of these emergent findings, the evidence at present remains limited, particularly with reference to individuals with severe and enduring mental health problems.

### **Psychological Assessment**

As with other areas of assessment, evaluation of the impact of standardized strengths assessments in routine settings has been more limited (Anthony & Rowa 2005). The importance of psychological assessment for both staff and clients has been highlighted in a meta-analysis of 17 studies (Poston & Hanson, 2010). The individual studies included in the analysis assessed a wide range of processes and outcomes including self-esteem, hope, satisfaction, dyadic cohesion, and hospitalization, with all studies required to utilize an experimental design which allowed for the calculation of a Cohen's *d* effect size. Results indicated that psychological assessments, particularly when combined with personalized and collaborative feedback, were beneficial to both the processes and outcomes of treatment.

### **Personal Recovery and Mental Health Services**

The recent interest in personal recovery among services and service providers and the drive towards the Substance Abuse and Mental Health Services Administration's (SAMHSA) national outcome measure domains (Farkas, Ashcroft & Anthony, 2008; Slade & Hayward, 2007) has brought a strengths-based focus to the forefront of research and policy, heightening the need for systematic evaluations of the approach. Driven largely by consumer movements in the US, UK, Australia and New Zealand, the notion of recovery has rapidly gained momentum within mental health practice and policy (Amering, 2009; Slade, 2009). A systematic review and narrative synthesis of both qualitative and quantitative models of personal recovery from mental illness identified five key processes common within the literature. These were Connectedness, Hope and optimism, Identity, Meaning and purpose, and Empowerment (Leamy, Bird, Le Boutillier, Williams & Slade, 2011). Within the core category of Empowerment, “focusing on the strengths” was vital to an individual’s personal recovery.

Services which promote personal recovery focus on the individual as a person with unique talents, strengths and abilities (Deegan, 1988). A thematic analysis of international recovery-oriented practice guidance identified 4 overarching themes relating to recovery-oriented practice, namely Promoting citizenship; Organizational commitment; Supporting personally defined recovery; and Working relationships. Within the guidance relating specifically to how services can ‘support personally defined recovery’, adopting a strengths focus and using a person’s natural supports were key sub-themes (Le Boutillier, Leamy, Bird, Davidson, Williams & Slade, 2011). In practice, this means assessing and using knowledge of a person's strengths and natural supports to inform assessments, care plans and goals, and to actively use the identified strengths within a person's care and treatment.

Finally, there are many commonalities between the factors associated with recovery and personal strengths and those related to resilience and post-traumatic growth. In parallel with the positive psychology movement, research into resilience has increased considerably over recent decades (Windle, Bennett & Noyes, 2011), with researchers focusing on the assets and resources available to the person which allow them to “bounce-back” and overcome the effects of adversity or stress (Gartland, Bond, Olsson, Buzwell & Sawyer, 2011). It has been proposed that a clinical focus on amplifying strengths, improving well-being and increasing resilience would require a significant re-construction of the role of the mental health professional, with a greater emphasis on partnership working and social activism (Slade, 2010).

### **Aims of the Study**

Despite the increased emphasis on strengths-based approaches there has been no published systematic review and evaluation of the use of strengths-based assessments within mental health populations. The aims of this study are to describe and evaluate the available strengths assessments, including their psychometric properties, for use in mental health services.

## **Method**

### **Search Strategy and Data Sources**

A systematic literature search using four data sources was conducted to identify strengths assessments used in mental health populations.

1) 12 bibliographic databases were searched: AMED, British Nursing Index, EMBASE, MEDLINE, PsycINFO, Social Science Policy (accessed via OVID SP); CINAHL, International Bibliography of Social Science (accessed via EBSCOhost); and ASSIA, British Humanities Index, Sociological abstracts and Social Services abstracts (accessed via CSA illumina). All databases were searched from inception to August 2010. A scoping search was conducted to inform the search strategy, using “strengths (and synonyms)” AND “assessment (and synonyms)” identified from the title, abstract, keywords and medical subject headings (MeSH). This indicated the search terms were insufficiently specific due to the unfeasibly large number of hits retrieved (>100 000), so the search was refined. First, two sets of search terms were developed, one set for “strengths” and one for “assessments” and used to perform a keyword, title and abstract search. The “strengths” terms were combined with the “assessment” terms using the ADJ2 function (*i.e.* terms within two words of each other). Second, as MeSH headings were only available for the assessment terms, these were combined with the following keyword, title and abstract terms: ((strength\$ adj based) OR (personal adj strength\$) OR (character adj strength\$)). Third, identified experts and known strengths assessments were used as search terms. A full copy of the search protocol is available on request from the corresponding author. In each case the search was adapted for the individual databases and interfaces.

2) The table of contents of Journal of Positive Psychology, Psychiatric Rehabilitation Journal, Journal of Clinical Psychology, American Psychologist, Assessment, and Psychological Assessment and the reference lists of retrieved articles were hand-searched.

3) Web-based resources were identified by internet searches using Google Scholar, and searching key websites: [www.strengths2020.com](http://www.strengths2020.com), [www.cappeu.com](http://www.cappeu.com), Department of Health, Scottish Recovery Network, Sainsbury's Centre, Recovery Devon, Repository of recovery resources, Mind, Rethink, NMHDU, Ausienet, New Zealand Mental Health Commission.

4) Relevant papers were suggested by the expert panels involved in the REFOCUS study, comprising 54 individuals from clinician, researcher and consumer-researcher backgrounds.

All identified articles were added to Reference Manager, Version 11 (2005) and duplicate articles removed from the Reference Manager database.

### **Eligibility Criteria**

Retrieved papers that explicitly described or validated a strengths assessment for use within an adult mental health population (ages 18-65) were eligible for the review. The strengths assessment could either be a quantitative measure (questions or items with a numerical scale or producing numerical data) or a qualitative interview (questions producing textual data). To be included, the assessment had to explicitly identify and focus on the strengths of the individual. Papers were not restricted to any particular study design. As the aim of the review was to evaluate the use of strengths-based assessments within mental health services, papers were excluded if they did not describe, test or validate an assessment of strengths specifically in a mental health population. This decision was taken as there may be particular issues surrounding the feasibility of these assessments within mental health services, such as staff time or consumer capacity.

Papers were also excluded from the review if they, a) identified and listed the strengths of a particular population without presenting details of the assessment b) looked at predictors of strengths without presenting details of the assessment c) focused on or assessed only one particular strength e.g. trust, and d) were not available in English. The eligibility of papers retrieved in the search was rated by one reviewer (VB), with the full text of all potentially relevant papers retrieved.

### **Data Abstraction and Management**

For all assessments meeting the eligibility criteria, data were extracted on the content of the measure and its use within mental health services, and then tabulated. To help describe the assessments, the components and items used to operationalise the concept of strengths were extracted and themed. Vote counting was used to identify the number of papers mentioning each theme. Themes that were included in at least three of the assessments were then organized into an overarching framework by two independent reviewers (VB and CL), with disagreements resolved by discussion. Finally, the Terwee and colleagues (2005) quality criteria were used to evaluate the psychometric properties of the quantitative assessments. Eight areas are included in the criteria covering both reliability and validity: content validity, internal consistency, construct validity, reproducibility (agreement and reliability), responsiveness, floor and ceiling effects, and interpretability. Areas were scored as + (Positive), ? (Intermediate), - (Poor) or 0 (No information available) according to study design, outcome and reporting quality. As no gold standard measure of strengths has been identified, criterion validity was not assessed.

## **Results**

The search process and total number of articles included in the review are shown in Figure 1.

*Insert Figure 1 here*

In total, 12 strengths assessments were identified in 16 papers. A full list of excluded studies is available from the corresponding author. Characteristics of the 12 assessments, including the items contained within each assessment, and their use in mental health research are described in Table 1.

*Insert Table 1 here*

### **Characteristics of Identified Assessments and Measures**

Assessments varied as to whether they focused purely on strengths e.g. Values in Action – Inventory of Strengths (VIA-IS, Peterson & Seligman, 2004), Strengths-Self Assessment Questionnaire (McQuaide & Enrenreich, 1997), or a combination of strengths, difficulties and needs e.g. Strengths Assessment Worksheet (SAW; Rapp & Goscha, 2006; Rapp, Kelliher, Fisher & Hall, 1994), Four-Corners Matrix (Berg, 2009; Lopez & Synder, 2003; Synder, Ritschel, Rand & Berg, 2006). Variation was also apparent in the scope of the assessment, with most focusing on both the individual and their environment, whereas the VIA-IS (Peterson & Seligman, 2004) focused purely on the individual and their character strengths.

### **Operationalization of “Strengths”**

A total of 39 themes were identified from items used to operationalize strengths across the assessments. The most common themes were personal attributes and relationships followed by skills, talents and capabilities, resilience and coping, community and social

supports. The themes were organized into three categories which reflected the definitions of strengths given in the assessments and within the wider literature: Individual (which relate to the resources available to the person including their talents and attributes) Environmental (external resources within the immediate environment and wider community) and Interpersonal (those arising from the interaction between the individual and their environment to allow access to the resources). Out of the 39 themes, 24 were rated in at least three assessments, as shown in Table 2.

*Insert Table 2 here*

### **Research Using Assessments**

In total 20 papers reported research concerning the strengths assessment. Of these papers, 13 evaluated the assessment within practice, four tested the psychometric properties, two used the Client Assessment of Strengths, Interests and Goals (CASIG) as a predictor of therapeutic alliance and treatment adherence (Bordeau, Th  roux & Lecomte 2009; Lecomte et al.2008) and one described the protocol for the Adult-Resiliency Framework as a strengths assessment in their community research program (Anderson and Larke (2009). Details of the evaluation studies including the population, outcomes and limitations are shown in ODS1. In summary, the most widely utilized assessment was the SAW (Rapp & Goscha, 2006), which has been evaluated as part of the broader Strengths-Based Case Management (SBCM) intervention for individuals with severe mental illness. Ten evaluations of SBCM have been conducted, including three RCTs, four quasi-experimental studies and three non-experimental designs. SBCM was associated with reduced hospitalization (Macias, Farley, Jackson & Kinney, 1997; Rapp & Chamberlain, 1985; Rapp & Wintersteen, 1989), symptoms (Barry, Zeber, Blow & Valenstein, 2003) and improved social functioning (Ryan, Sherman, & Judd, 1994). However, many of the

studies did not compare outcomes across the different treatment models, had small sample sizes and high attrition rates. Two studies evaluated the use of the VIA-IS as an intervention within mental health populations. Resnick and Rosenheck (2006) provide qualitative data regarding the experience of consumers at a Veteran Affairs clinic. Consumers reported a sense of mastery and accomplishment after completing the online version of the VIA-IS. The VIA-IS has also been utilized in the first stages of positive psychotherapy (Seligman, Rashid & Parks, 2006), with two RCTs demonstrating significantly higher remission rates, and greater reductions in depression symptoms in the intervention group. Finally, McQuaide and Ehrenreich (1997) report three case studies detailing the positive experiences of clients undergoing the Strengths Self-Assessment Questionnaire. None of the included studies assessed the feasibility of conducting strengths assessments with individuals with mental illness; particularly those with severe and enduring problems, Issues for routine clinical practice including the demand on staff time and consumer's ability to comprehend the assessments for example, were also ignored.

### **Psychometric Properties of Quantitative Strengths Assessments**

Four of the five quantitative measures provided data on their psychometric properties when tested in mental health populations. The rating of each measure against the Terwee criteria (2007) is shown in Table 3.

*Insert Table3 here*

The CASIG has been formally evaluated in two psychometric studies (Lecomte, Wallace, Caron, Perreault & Lecomte, 2004; Wallace, Lecomte, Wilde & Liberman, 2001). There was evidence of good internal consistency (Cronbach's alpha for each dimension ranged

from 0.51 to 0.92, with the majority of dimensions  $>0.70$ ), and construct validity. Construct validity was rated as positive as the correlations between the CASIG and the Behavior and Symptom Identification Scale-32, the Short Form Health Survey-36, and the Camberwell Assessment of Needs were all significant as hypothesized. The content validity of the CASIG was also rated as positive due to the clear description of development provided and the involvement of the target population in its design (Wallace, Lecomte, Wilde & Liberman, 2001). Reliability and agreement were rated as intermediate as there was limited information about how the measure and resulting scores can be used to distinguish different types of patients and limited information about the methodology used to assess agreement respectively. Finally, as only two sub-groups of participants (community and inpatients) were included in the analysis, interpretability of the assessment scores was rated as intermediate as four sub-groups are required to be rated as positive on this dimension.

Although adequate psychometric properties such good inter-rater reliability (Peterson & Park, 2004), internal consistency (Peterson, 2006) and construct validity (Linley et al., 2007; Peterson & Park, 2004), have been reported for the VIA-IS when used in the general population (see Peterson & Park, 2004 for a review of the psychometric properties), there was a lack of evidence for any measurement properties relating to its use within mental health services. Only limited information was available regarding interpretability and content validity (Peterson, 2006; Resnick & Rosenheck, 2006). Although, participants reported qualitative meanings linked to the different scores on the VIA-IS, and a number of different groups of individuals have been tested (e.g. those who are currently using services, individuals who have fully, partly or not recovered from psychological problems), no information was provided about the minimal important

change restricting the rating of interpretability to intermediate. Content validity was rated as intermediate, due to the lack of consumer involvement in the design of the assessment.

One study assessed the interpretability of the Adult Needs and Strengths Assessment-Abbreviated (ANSA-A; Lyons & Anderson, 1999) by investigating whether total scores could be used to predict the level of care required for different participants. Although there was some supporting evidence in this context, with the analysis indicating a significant difference between three different patient groups (ambulatory clinic, acute ward and tertiary ward), no other psychometric properties were formally investigated (Nelson & Johnston, 2008). For both the ANSA-A and ANSA, there was no involvement of the target group in the design or method of developing the assessment, therefore, this area was rated as poor. Finally, although some information has been reported about the reliability of the ANSA (kappa values of 0.87 – 0.89) these have been based on unpublished studies, with no information available regarding study methodology. Lastly no measurement properties were reported for the Strengths Self-Assessment Questionnaire with the authors noting that the questionnaire is intended to be a clinical instrument and not a psychometrically validated scale (McQuaide & Ehrenreich, 1997).

## **Discussion**

This is the first systematic review to identify and evaluate strengths-based assessments for use within mental health services. 12 strengths assessments which were either specifically designed for use with a mental health population or evaluated within this population were included in the review. The Strengths Assessment Worksheet (Rapp & Goscha, 2006; Rapp, Kelliher, Fisher & Hall, 1994) was the most frequently evaluated assessment within mental health settings and has been routinely evaluated in the context of Strengths-Based

Case Management (SBCM) with positive results across a range of outcomes. The Client Assessment of Strengths, Interests and Goals (CASIG; Wallace, Lecomte, Wilde & Liberman, 2001) was the only quantitative measure to be formally evaluated in a well designed psychometric study, with evidence of good internal consistency, construct and content validity. In general, there was a lack of good quality research evaluating the use of the strengths assessments within mental health populations, with the available studies, although producing positive results, limited in their number and design. Furthermore, there was very limited information about the feasibility of conducting these assessments within services.

### **Definition of Strengths**

To describe the content of the different strengths assessments, the dimensions and items included in each individual assessment were extracted and themed. Twenty-four themes were common to three or more assessments and were organized into three overarching categories. This forms the basis of an empirically defined definition, namely, “*Strengths can be present at three levels: Individual, Environmental and Interpersonal. Strengths at the Individual level relate to the resources available to the person, and include the person’s talents, capabilities, abilities, skills, interests and personal attributes (both physical and psychological). Strengths at the Environmental level include external resources available to the person in both their immediate environment and the wider community. Strengths at the Interpersonal level arise from the interaction between the Individual and Environmental level, and allow the individual to access internal and environmental resources.*”

Further to these three categories, within the wider contemporary strengths literature a conceptual distinction between talents, performance strengths and virtue ethics strengths is often made (Peterson & Seligman, 2004). A talent is most often conceptualized as a stable capacity that may be genetically based; however it only becomes performance strength if it is enhanced by practice. A virtue ethics approach views a strength as a strength of character, that is, when somebody is living by a particular value, where a value has a moral content, and is deemed as good. There are differences in whether individuals and assessments take a more performance versus a virtue ethics view of strengths. Hence, for research and clinical practice alike it is important to clearly define the construct of strength being used.

### **Strengths and Limitations of the Review**

This study has three limitations. Firstly, many strength assessments have not been specifically designed for use within a mental health population but have instead emerged from positive psychology and are designed for the general population. This meant that a number of assessments were excluded from the review. Outside of the serious mental illness literature the Clifton Strengths Finder (Rath, 2007) is a good example of an assessment consistent with a performance view of personal strengths. Recently, Linley and colleagues (2010) have developed the Realise2 strengths assessment tool, which examines further the notion that a strength must combine good performance, be energizing when used, and be used frequently. These assessments could have potential use within mental health services (Rashid & Ostermann, 2009).

Secondly, the review may have missed studies evaluating an assessment if terms related to strengths-based approaches or assessments were not included within the abstract,

keywords or title of the article. However, hand searches of the literature and web-based searching were conducted using the names of all the identified strengths assessment to identify any additional papers.

Thirdly, few articles explicitly defined or operationalised the term “strengths”. This lack of clarity concerning the definition of “strengths” means searching the literature for potential assessments is problematic. A number of synonyms and terms for strengths were included in the search strategy, such as talents, capabilities, assets, forte and skills. However, it is possible that the addition of further terms would lead to a greater number of strengths assessments being included. The empirically based definition of strengths suggested in the present review may be one way of overcoming this limitation in future reviews and research into strengths based assessments and approaches.

Despite these limitations, the review has three main strengths. Firstly, this is the first systematic review and evaluation of strength-based assessments for use within mental health services. Secondly, a robust search strategy including four different data sources was used within the review. Finally, the review has categorized the way strengths are operationalised within these assessments. The definition of strengths developed in the review provides conceptual clarity and could be used by future researchers to guide the development of new assessments.

### **Clinical Implications**

A strengths based approach to mental health care is not a new concept, and has been apparent in social work practice and occupational therapy, among other professions, for many years (Saleebey, 2006). Crucially, core values that are deeply embedded within

these professions also shape the style with which assessments are conducted. Occupational therapy practice, for example, integrates both biopsychosocial and phenomenological orientations (Mattingly & Fleming, 1994). The focus on the broader individual's life experience allows exploration during assessment to go beyond the scope of medicine, disability, and risk (Ennals & Fossey, 2007). For example, profession-specific assessments (e.g. Occupational Performance History Interview (Kielhofner, 2007; Kielhofner & Henry, 1988); Canadian Occupational Performance Measure (Law, Baptiste, McColl, Opzoomer, Polatajko & Pollock, 1990) could all be conducted using a patient-centered strengths focus.

At present, strengths assessments are not routinely used in mental health services. It is known that routine use of standardized measures can benefit people using mental health services (Slade et al., 2006), consistent with the finding that the process of doing a strengths-based assessment is in itself therapeutic (Graybeal, 2001). Specific to mental health services, the Poston and Hanson (2010) meta analysis of 17 published studies indicated that psychological assessments improved the client outcomes measured in the individual studies and could be considered an intervention in their own right. Furthermore, Meyer and colleagues (2001) demonstrated that both the process and outcomes of therapy could be improved by individual psychological assessments which involved collaboration between the client and therapist. Within the 125 meta-analyses and 80 samples included in their review, outcomes including engagement, symptomatology and self-esteem were all shown to benefit from individualized assessment. Consistent with the previous research, the qualitative study included in the present review (Resnick & Rosenheck, 2006), indicated that veterans who underwent the VIA-S (Peterson & Seligman, 2004) assessment felt a sense of accomplishment and mastery, with the majority reporting subsequent improvements in mood. The use of a strengths based approach has also been

linked to an increase in person-centered goal setting and achievement (Rapp & Goscha, 2006; Rapp, Kelliher, Fisher & Hall, 1994). In particular, a review indicated that individuals undergoing a strengths assessment as part of SBCM were more likely to set goals based around independence, vocation and education with between 77 and 84% of these personal goals achieved (Rapp & Goscha, 2006).

Although none of the evaluation studies formally investigated the impact of strengths assessment on the SAMHSA's National Outcome Measure Domains (NOMs), a number of the domains were included in the research. For example, within the context of SBCM, the SAW was shown to improve retention and uptake of drug programs (Havens et al., 2007), improved educational outcomes (Modcrin, Rapp & Poertner, 1988) and reduced hospitalization (Macias et al., 1994), whereas the VIA-IS was demonstrated to impact on client perception of care (Resnick & Rosenheck, 2006) and remission rates (Seligman, Rashid & Parks, 2006). An important area of future work will be to assess the impact of strengths assessments within routine care in respect to the NOMs domains.

The importance of strengths-based approaches for clinical services has further been highlighted by the recent emphasis on recovery in Anglophone countries. Central to both recovery-orientated services and strengths-based approaches is the positive relationship between the consumer and clinician. Studies of therapeutic alliance indicate that a positive relationship is valued by both parties (Priebe & McCabe, 2006), with quantitative data supporting the association between positive therapeutic relationships and improved mental health outcomes (Catty, Winfield & Clement, 2007). Based on a conceptual framework of recovery (Leamy, Bird, Le Boutillier, Williams & Slade, 2011) and on a synthesis of recovery-orientated practice guidelines (Le Boutillier, Leamy, Bird,

Davidson, Williams & Slade, 2011) a recently published recovery intervention manual (Bird, Leamy, Le Boutillier, Williams & Slade, 2011) has included the SAW as one of the three working practices aimed at improving the relationship between consumers and staff. The intervention involves care planning to amplify and use strengths as well as ameliorate deficits, and is currently being tested in a cluster randomized controlled trial (see [researchintorecovery.com/refocus](http://researchintorecovery.com/refocus) for further information).

### **Future Research**

If strengths-based assessments are to become routine in mental health care further research is required to assess the psychometric properties, feasibility and outcomes of using these assessments. These evaluations could concentrate on outcomes for consumers, including the NOMS, and on the attitudes of staff. Secondly, future research could focus on the development and evaluation of new strengths assessments based upon the empirical definition of strengths presented in this review. The definition provides a defensible foundation for the development of new measures, particularly as Meyer and colleagues (2001) have suggested that measures based on multiple dimensions are associated with greater validity than those based on a single dimension.

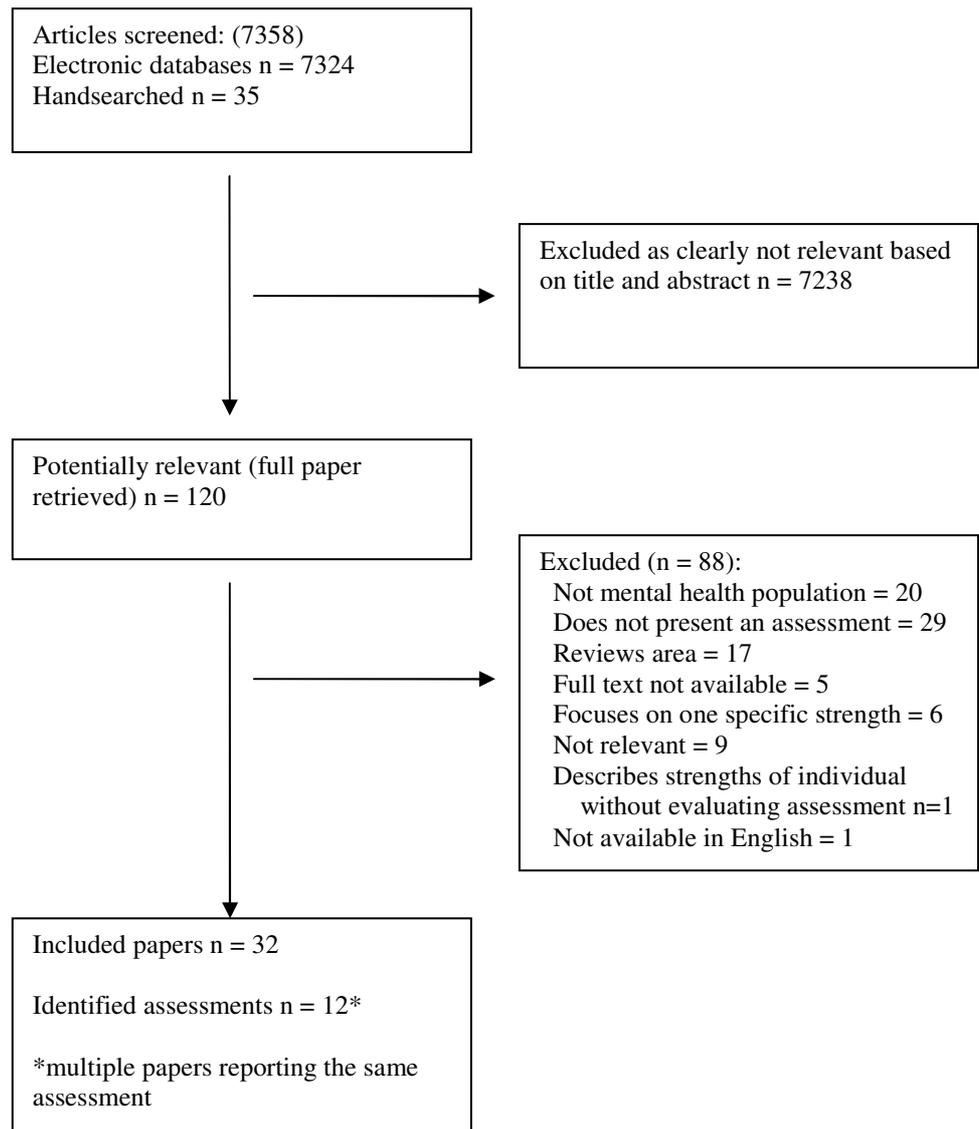
In conclusion, although a number of strengths assessments are currently available, due to the limited amount of evaluative research, only two can be tentatively recommended for routine use, namely the CASIG and the SAW. For services aiming to promote recovery, clinical assessments must focus on strengths in addition to the needs of the individual. To achieve this aim, they require strengths-based assessments which have been psychometrically tested and positively evaluated for clinical use.

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## **Declaration of Interest:**

None



**Figure 1. Flow diagram of studies included in the review**

Table 1: Strengths Assessments

Name of Assessment	Brief description	Mental health research
<b>QUALITATIVE ASSESSMENTS</b>		
1. Strengths Assessment Worksheet (Rapp & Goscha, 2006; Rapp et al. 1994)	Clinician administered semi-structured interview covering seven domains. Current status, Resources, and Individual's desires and aspirations are recorded for each domain.	10 studies assessing strengths case management (Barry et al., 2003; Havens et al., 2007; Kisthardt, 1993; Macias et al., 1994; Modrcin et al. 1988; Rapp & Chamberlain, 1985; Ryan et al., 1994; Stanard, 1999; Macias et al., 1997; Rapp & Wintersteen, 1989)
2. Strengths Assessment Worksheet – spirituality (Eichler et al, 2006)	Clinician administered semi-structured interview expanding on the spirituality section of the Strengths Assessment Worksheet.	
3. Person-centered Strengths Assessment (Kisthardt, 1993, 2006)	Clinician administered semi-structured interview covering eight life domains, with the most meaningful area identified at the end of the interview.	
4. Four-Corner matrix (Berg, 2009; Synder et al., 2006; Lopez & Synder, 2003)	Unstructured interview split into four quadrants covering assets and weaknesses in the individual and their environment.	
5. Adult Resiliency – developing strengths measure (Hammond, 2001)	Clinician administered semi-structured interview using open questions covering 11 areas	1 intervention protocol (Andersen & Larke, 2009)
6. ROPES strengths assessment framework (Graybeal, 2001)	Clinician administered semi-structured interview using open questions to identify strengths in five areas	
7. Framework for Assessment and the assessment of helpseeker strengths (Cowger et al., 2006)	Clinician administered semi-structured interview based around four quadrants. An additional assessment of helpseeker strengths contains a list of closed statements.	
<b>QUANTITATIVE ASSESSMENTS</b>		
8. Client Assessment of Strengths, Interests and Goals (Wallace et al., 2001)	Self-rated assessment with open and closed questions covering 23 areas of life. The closed questions can be used to produce a quantitative rating.	4 studies (2 psychometric assessments, 2 exploratory studies) (Bourdeau et al. 2009; Lecomte et al. 2004; 2008 Wallace et al. 2001)
9. Strengths Self-Assessment Questionnaire (McQuaide & Enrenreich, 1997)	Scale-based self-report quantitative measure including 38 items rated from strongly disagree to strongly agree	1 case study ( McQuaide & Enrenreich, 1997)
10. Adult Needs and Strengths Assessment (Lyons & Anderson, 1999)	Clinician administered scale-based measures containing two scales assessing needs and strengths across 6 domains.	2 psychometric studies (dissertation unavailable)
11. Adults Needs and Strengths Assessment – Abbreviated (Nelson & Johnston, 2008)	Clinician administered scale-based measure. Abbreviated version of the above including 16 closed questions.	1 Psychometric study (Nelson & Johnston, 2008)

Name of Assessment	Brief description	Mental health research
12. Values In Action – Inventory of Strengths (Peterson & Seligman, 2004)	Self-report scale based measure containing 240 items rated on a five-point likert scale. The items assess 24 character strengths covering six virtues.	2 studies (1 qualitative study, 1 intervention study) (Resnick & Rosenheck, 2006; Seligman et al. 2006) 1 psychometric study (Peterson & Seligman, 2004)

*Table 2: Strengths Themes Rated in at Least Three Measures*

Assessment (see Table 1):	1	2	3	4	5	6	7	8	9	10	11	12	Total
<b>Individual</b>													
Personal / psychological factors including hope, temperament, optimism			√	√	√	√	√	√	√	√	√	√	10
Dreams, aspirations or goals	√	√	√			√		√	√			√	7
Skills, talents and competencies	√	√	√		√	√	√	√		√		√	9
Resilience and coping abilities	√		√		√	√	√	√	√	√		√	9
Spiritual/ religious	√	√	√		√			√		√		√	7
Health and health management (physical and mental)	√		√			√		√		√	√		6
Occupation including vocation and education	√		√					√	√	√			5
Leisure and interests	√		√			√		√		√			5
Cognitive							√	√		√	√	√	5
Commitment to learning and growth			√		√		√		√			√	5
Substance misuse including overcoming misuse			√		√			√		√	√		5
Self-concept including ethnicity, sexuality, gender etc.					√		√		√	√			4
Overcoming weaknesses			√	√			√						3
<b>Environmental</b>													
Social supports	√	√			√	√	√	√	√	√		√	9
Community	√	√	√		√	√	√	√		√		√	9
Family	√		√		√	√	√	√	√	√			8
Environmental assets and resources				√		√	√			√			4
Housing / living	√		√					√		√			4
Political including rights and advocacy					√		√	√				√	4
Transportation	√		√					√		√			4
Financial resources	√		√					√					3
<b>Interpersonal</b>													

Relationships	√	√	√	√	√	√	√	√	√	√	10
Solutions				√	√	√	√			√	5
Options			√	√			√				3

Table 3: Psychometric Properties of the Quantitative Strengths Assessments (n=5)

Measure	Content validity	Internal consistency	Construct validity	Reproducibility		Responsiveness	Floor or ceiling effect	Interpretability
				Agreement	Reliability			
8. CASIG	+	+	+	?	?	0	0	?
9. Strengths self-assessment Questionnaire	0	0	0	0	0	0	0	0
10. ANSA	-	0	0	?	?	0	0	?
11. ANSA-A	-	0	0	0	0	0	0	?
12. VIA-IS	+(a), ?(b)	+(a), 0(b)	+(a), 0(b)	?(a), 0(b)	?(a), 0(b)	0(a, b)	0(a,b)	+(a), ?(b)

Rating + = positive; ? = Intermediate, - = poor; 0 = no information available, a = general population, b = mental health population ANSA = Adult Needs and Strengths Assessment, ANSA-A Adult Needs and Strengths Assessment – Abbreviated; CASIG = Client Assessment of Strengths, Interests and Goals; VIA-IS = Values in Action Inventory of Strengths

Online Data Supplement

Reference	Study design	Population (N)	Intervention / control	Main findings	Limitations
<b>Strengths Assessment Worksheet</b>					
Havens et al. 2007	Sub-group analysis of an RCT with 1 month follow up	37 Injection drug users (IDU) with comorbid ASPD (part of a larger study of 162 IUD users; Strathdee et al. 2006)	Intervention (I): Strengths based case management (SBCM) with activities around engagement, Strengths-based assessment worksheet, personal care planning and resource acquisition.  Control (C): passive referral to drug program	SBCM led to an increase in individuals entering drug treatment, although this difference was only approaching significance (OR = 1.74, 95% CI 0.97-3.11). For Consumers with ASPD, individuals who received >25 minutes of case management treatment were statistically more likely to enter drug treatment than those who received <5 minutes treatment (OR = 3.51, 95% CI 1.04-11.9). There was a trend for individuals who received between 5 and 25 minutes to enter treatment compared to those you received <5 minutes (OR =2.19, 95%CI 0.06-76.9)	Only approximately 23% of the whole sample had a diagnosis of ASPD.
Modcrin, Rapp & Poertner (1988)	RCT with 4 months follow up	N=89 individuals referred to a mental health centre of which 44 were included in the analysis.	I: SBCM as above (n=23)  C Standard case management (n=21)	Discriminant analysis was conducted to assess which areas discriminated between individuals in the two groups. Results indicated that tolerance of stress, community living skills, vocational training, inappropriate behavior and leisure time were all improved in the intervention group, with the control group showing better socialization. There were no differences in any other outcomes assessed.	High attrition rate (51%)
Macias et al. (1994)	RCT with 18 months follow up	N = 41 consumers with serious mental illness.	I: SBCM and psychosocial rehabilitation program providing daily activities, group discussions and recreational outings. (n=20)  C: Psychosocial rehabilitation	Consumer rated variables: consumers in the intervention group had fewer problems with mood, thinking, better physical and mental health, psychological wellbeing and competence in daily living (all p<0.05). There was no difference in social support or service satisfaction between the two groups.  Family-rated variables: consumers in the intervention group	Small sample included in the trial and analysis.

			program only (n=21)	<p>were rated as having better psychiatric symptomatology and family members felt less burden compared to those in the control group (both <math>p &lt; 0.05</math>).</p> <p>Health care professional rated variables: consumers were rated as having significantly less psychiatric symptoms than those in the control group (<math>p &lt; 0.05</math>) However there was no difference in ratings of social behavior, relationships self-care, money management or physical health.</p> <p>Hospitalizations rates decreased significantly for those in the intervention group, whereas the rates increased for the control group, whilst rates of crisis centre utilization reduced significantly for the intervention consumers.</p>	
Macias et al. (1997)	Quasi-experimental design with 9 months follow up	N = 97 consumers with serious mental illness (58% psychosis, 30% MDD).	I: SBCM (n=48) C: Treatment as usual (TAU; n=49)	Pre-test differences in symptom levels were maintained at post test, with individuals in the intervention group having higher levels of depression, anxiety, somatization and lower levels of perceived support (all $p < 0.05$ ). However, individuals within the groups did significantly improve on measures of depression, residential autonomy and therapy attendance between pre and post assessments.	Non-randomized design with significant pretest differences between the groups.
Stanard (1999)	Quasi-experimental design with 3 months follow up	N= 44 with severe mental illness (schizophrenia, schizoaffective disorder or major depression).	I: Individuals in the teams received 40 hours of training in SBCM (n=29) C: TAU with no additional training (n=15)	<p>Quality of Life significantly improved in the SBCM group, while decreasing in the control (<math>p &lt; 0.05</math>). Both experimental and control groups significantly improved on symptom measures. There was a significant improvement in vocational and education outcomes in the SBCM group compared to controls (<math>P &lt; 0.01</math>) and in residential outcomes (<math>P &lt; 0.001</math>).</p> <p>There was no significant effect on hospitalization rates for either group.</p>	<p>Non-randomized design</p> <p>Low opt in rate (&lt;50% of those approached)</p>

Barry et al. 2003	Longitudinal naturalistic design with a two year follow-up period	225 Veterans with severe and persistent mental illness (subset of a larger study of specialized treatment programs Blow et al. 2000) of which 174 (77%) were followed up at two years.	I: SBCM. Individuals work with one member of staff and the focus is on community membership and resource acquisition. (n=81)  C: Assertive case management delivered by a multidisciplinary team (n=93)	Outpatient use increased over the two years of the study for both groups, with SBCM participants using outpatient services more than ACT. Inpatient care was significantly reduced over the two years for both groups, although this reduction was greater for the ACT group (61% versus 53%) Medical days were significantly reduced in the SBCM group, but were increased in the ACT group.  There was a significant reduction in BPRS scores and negative symptoms in both groups, with the reduction greater in the SBCM group. There was no difference in medication use or on measures of global life satisfaction or Activities of daily living.	Non-randomized study design with between group differences at baseline.
Ryan, Sherman & Judd (1994)	Three group post-hoc correlational study	N=382 individuals with a diagnosis of psychosis	I: Strengths based Habilitation-rehabilitation model  C1: Community support C2: Traditional case management	Both the strengths-based service and the community service were associated with faster community adjustment compared to traditional services. These two services were more effective in promoting client adjustment compared to traditional psychiatric services, although the difference was only approaching significant (p=0.075).	Little detail provided about each type of intervention  Post hoc comparison
Rapp & Wintersteen (1989)	Non-experimental	N = 235 consumers with serious mental illness (88% psychosis)	I: SBCM	79% of consumer goals were achieved during the follow up period. Hospitalization rates were reduced compared to the average for the state (15% vs. 30%).	Non randomized and non experimental design
Rapp & Chamberlain (1985)	Non-experimental	N = 19 consumers with serious mental illness at high risk of hospitalization.	I: SBCM	61% of all client goals were achieved with a further 16% partially achieved during the study period. Consumers also rated their case managers as friendly and respectful with 91% satisfied with the results and all stating they would recommend the program to others. Hospital admission rates	Non randomized and non experimental design with a small sample.

				declined by 20% during the course of the intervention.	
Kisthardt (1994)	Non-experimental	N = 66 consumers with serious mental illness.	I: SBCM	The study focused on the setting and achievement of consumer goals across different life domains. Consumers achieved their goals in a number of areas including independent living, where 84% of goals were met, vocation and education, leisure time and social support, financial and health related goals.	Non randomized and non experimental design.
<b>Values in Action – Inventory of Strengths</b>					
Resnick & Rosenheck (2006)	Qualitative study	N = unknown. Veterans attending the psychiatric rehabilitation center	Veterans completed the inventory of personal strengths, to produce a signature strengths report.	Individuals reported a sense of mastery and accomplishment from just completing the assessment. Most individuals reported improvements in mood and that they were more positive about themselves.	Limited details about the intervention, sample and findings.
Seligman, Rashid & Parks (2006)	2 x RCT with 12 months follow up	Study 1 N = 40 individuals with mild to moderate depression Study 2 N = 28	Study 1 I: Group positive psychotherapy (PPT) involving using the VIA-IS to identify signature strengths, alongside other exercises such as gratitude exercises and forgiveness. (n=19) C: No treatment (n =21)  Study 2 I: Individual PPT (n=11) C: TAU (n=9) and TAU plus antidepressant medication	Study 1: Individuals in the intervention group experienced a significant decrease in depression scores (p<0.003) and a significant increase in satisfaction with life (p<0.001) at the end of treatment which was maintained in the follow up year. Individuals in the control group stayed the same on both measures.  Study 2: There was a significant reduction in depression scores for individuals in the intervention group compared to controls. There was also an increase in general functioning and satisfaction within the intervention group.	Study 1 used a no treatment comparison group.  Both studies had small sample sizes.

			(n=12)		
<b>Strengths Self assessment Questionnaire</b>					
McQuaide & Enrenreich (1997)	Case study	Three individuals seeking individual therapy.	Case studies of individuals using the Strengths Questionnaire within individual therapy.	Throughout therapy, individuals (both clinicians and clients) were made aware of the clients strengths. For two out of the three people, this was a very positive experience throughout, with increases in positive affect and self esteem. For the third individual, the experience of using the questionnaire was initially negative. Later on, this negative experience of anger at the questionnaire was talked through with the therapist and acted as the starting point for new conversations.	Case study design with three people. Lack of formal outcome measurement.

ASPD = Antisocial personality disorder; IDU = Injection drug user; OR = Odds ratio; PPT = Positive psychotherapy; RCT = randomized controlled trial; SBCM = Strengths-based case management; TAU = Treatment as usual; VIA-IS = Values in action – inventory of strengths

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