Contextual Behavioral Science and Global Mental Health: Synergies and Opportunities

Citation: White, R.G., Gregg, J. Batten, S., Hayes, L.L. & Kasujja, R. (2017). Contextual Behavioral Science and Global Mental Health: Synergies and Opportunities. Journal of Contextual Behavioral Science. In press http://www.sciencedirect.com/science/article/pii/S2212144717300583

Ross G. White[1*], Jennifer Gregg[2], Sonja Batten[3], Louise L. Hayes[4] & Rosco Kasujja[5]

[1]Institute of Psychology, Health and Society
University of Liverpool,
G.10, Ground floor, Whelan Building
Quadrangle
Brownlow Hill
Liverpool
L69 3GB
U.K.
*Corresponding author
Email: ross.white@liverpool.ac.uk

[2]San José State University
One Washington Square
San José,
CA
95192-0120
U.S.
Email: jennifer.gregg@sjsu.edu

[3]Booz Allen Hamilton
Washington D.C.
U.S.
Email: sonjavbatten@gmail.com

[4] Centre for Youth Mental Health, The University of Melbourne, & Orygen The National Centre of Excellence in Youth Mental Health
Melbourne
Australia
Email: louisehayes@me.com

[5]Makerere University
College of Humanities & Social Sciences
School of Psychology
Department of Mental Health
Kampala
Uganda
Email: rosokasug@gmail.com

Abbreviations: ACT: Acceptance and Commitment Therapy; CBS: Contextual Behavioral Science; FAP functional Analytic Psychotherapy; GMH: Global Mental Health; HIC: High-income Countries; LMIC: Low- and Middle-income Countries; WHO: World Health Organization

Abstract: Global Mental Health (GMH) initiatives aim to address inequities in mental health care across the world. Particular emphasis is placed on building mental health service capacity in low- and middle-income countries (LMIC) where over 80% of the global population lives. Consistent with this approach, concerted efforts are being made to globally disseminate psychological interventions. These initiatives must negotiate tensions that exist between making interventions sufficiently scalable, whilst retaining aspects of the psychotherapy process that maximize both the acceptability and efficacy of psychological interventions. This paper reflects on the important contribution that Contextual Behavioral Science (CBS) can make to GMH. CBS draws on behavioral and environmental principles that translate into various therapeutic applications [including Acceptance and Commitment Therapy (ACT) and Functional Analytic Psychotherapy (FAP)] and social change initiatives (such as the PROSOCIAL approach). Consideration will be given to the cross-cultural utility and validity of CBS approaches, and the way in which these can help ensure that GMH initiatives extend beyond narrow efforts to address symptoms of mental disorders to include a focus on enhancing wellbeing. It is proposed that knowledge from ACT and FAP can help build sophistication in efforts to develop and deliver 'therapist-free' psychological interventions that will need to retain sensitivity to clients' emotional expressions. In addition, the PROSOCIAL approach provides opportunities for groups of people to cooperate effectively to achieve shared aspirations and build 'communities of support' that can serve to optimize peoples' mental health and wellbeing.

Key words: Global Mental Health, Contextual Behavioral Science, Acceptance and Commitment Therapy, Functional Analytic Psychotherapy

Abbreviations: ACT: Acceptance and Commitment Therapy; CBS: Contextual Behavioral Science; FAP functional Analytic Psychotherapy; GMH: Global Mental Health; HIC: High-income Countries; LMIC: Low- and Middle-income Countries; WHO: World Health Organization

1. Introduction

Global Mental Health (GMH) has been defined as a field of study, research and practice concerned with addressing inequities in mental health provision across the globe (Patel & Prince, 2010). GMH has been influenced by a variety of factors, including the emergence of the field of Global Health and the development of metrics such as the *Disability Adjusted Life Year* (DALY), which have helped to facilitate comparison of the impact of various health conditions across the globe. A key focus of GMH has been to address the apparent lack of infrastructure for supporting the mental health and wellbeing of people living in low- and middle-income countries (LMIC). A total of 6.16 billion people live in LMIC, which equates to 84% of the global population (World Bank, 2015). Inadequacies have been highlighted in the availability of policies, legislation and workforce for mental health care in LMIC (The Lancet Series on Global Mental Health, 2007, 2011). However, concerns have been expressed that GMH activity may risk perpetrating forms of 'epistemic injustice' by prioritizing Western models of mental disorders over local ways of understanding distress (Watters, 2017). There is widespread recognition that researchers and clinicians interested in GMH need to work closely with local stakeholders to tailor interventions to the local context, and to address social determinants of distress (Patel, 2014; White, Jain, Orr, & Read, 2017).

2. Human Resources

Traditional models of mental health service delivery have relied on the availability of a large number of professional and human resources. Unfortunately, this level of human resource is not available in LMIC (Kakuma, Minas, van Ginneken, Dal Poz, Desiraju,...Scheffler, 2011; Saxena, Thornicroft, Knapp & Whiteford, 2007).

Drawing on innovative and pragmatic strategies from Global Health, the *Movement for Global Mental Health* (http://www.globalmentalhealth.org) and international agencies [such as the World Health Organization (WHO) through its mhGAP programme: http://www.who.int/mental_health/mhgap/en/)] have advocated for the use of 'task-sharing' initiatives where health related activities are delegated to non-specialist workers. The 'global dissemination' of psychological interventions has been recognized as an important priority for GMH (Fairburn & Patel, 2014). Three particular strategies have been proposed to meet the considerable shortfall of available psychotherapists, and to provide increased training opportunities for delivering psychological therapies: 1) 'Task-sharing' psychotherapist roles with non-specialist workers, 2) Employing computer programs/online systems to train psychotherapists, and/or 3) Utilizing 'therapist-free forms of treatment delivery' (i.e. 'program-led' interventions in which the intervention is delivered by the program/online system) (Fairburn & Patel, 2014, P.495). Fairburn and Patel (2014, 2017) indicated that 'training for trainer' approaches, which focus on training a smaller number of people in particular contexts and cascading this knowledge down to others, are not scalable and that emphasis should instead be placed on program/online delivery. More recently, Bockting, Williams, Carswell and Grech (2016) proposed that capacity for addressing mental health difficulties can be boosted by: 1) The delivery of evidence-based, low-intensity interventions by non-specialists; 2) Utilizing intervention protocols that are trans-diagnostic; and 3) Harnessing technology to support people to access interventions. Below we will describe how *Contextual Behavioral Science* (CBS) can speak to these issues and serve as a framework for advancing GMH research and practice.

3. Contextual Behavioral Science

CBS is defined as an empirical approach that aims to promote intentional, positive change in the world (Hayes, Barnes-Holmes & Wilson, 2012). It utilizes a *functional contextual* approach, which firmly situates behaviors (including thoughts, feelings, and other private events) in the context (and related contingencies) in which they occur. Functional contextualism places particular emphasis on the prediction of behavior with precision, scope, and depth. A lack of adequate consideration of contextual factors may increase the risk of biases occurring in the interpretation of individuals' behavior. As White and Jha (2014) stated: 'If all context, all trace of interaction, all of the essentially qualitative particularities that make up subjectivity are removed to produce 'pure' numerical data, the only subjects who remain are the analysts themselves. It is they who will re-invent the context required to make sense of the data, re-crafting the life-worlds of those researched to fit their own image' (P.273)

The CBS principles are highly relevant to the vision and objectives of GMH because of the specific emphasis that is placed on developing the: 1) *Precision* to reliably and unambiguously predict that distress will arise in particular contexts across the world; 2) *Scope* to account for the broad range of behaviors that are linked to the experience of distress in the diverse contexts; 3) *Depth* to be consistent with other theoretical frameworks that are relevant to GMH e.g. theories of human and economic development. Interventions based on CBS principles [such as Acceptance and Commitment Therapy (ACT: Hayes, Strosahl & Wilson, 1999, Hayes, Strosahl & Wilson, 2012) and Functional Analytic Psychotherapy (FAP: Kohlenberg & Tsai, 1994, Kohlenberg & Tsai, 2012)] do this by exploring the *function* of problematic

behavior and elucidating long-term positive reinforcers (personally-defined values) that can serve to enhance well-being, as well as reducing levels of distress. This article will reflect on the important synergies and opportunities that exist for integrating CBS with GMH.

4. The Application of Contextual Behavioral Science to Global Mental Health

4.1. The delivery of evidence-based, low-intensity interventions by non-specialists

The WHO has launched an initiative aimed at developing 'low-intensity psychological interventions for people in communities affected by adversity' (http://www.rcpsych.ac.uk/pdf/WHO-%20Volunteering%20and%20Internships-%20Brochure.pdf). 'Low intensity', in this instance, is defined as any evidence-based brief professionally-delivered interventions, guided self-help interventions, or entirely self-help interventions. There is growing evidence for these types of 'low intensity' interventions for common mental disorders (including anxiety disorders and major depressive disorder) owing to that fact that they can be disseminated to the large numbers of people affected by these difficulties. These *therapist-free* forms of intervention may have the added benefit of reducing the risk of stigma and feelings of disempowerment that some clients might experience when faced with meeting with a therapist in person (Owen, 1995; Joinson, 1998; Fink, 1999). Cavanagh, Strauss, Forder and Jones (2014) conducted a meta-analysis of 15 randomized controlled trials evaluating low-intensity self-help mindfulness/acceptance-based interventions (including seven RCTs evaluating ACT-based interventions. Six studies reported on *self-administered* psychological interventions (i.e. with no therapist support); four studies reported on predominantly self-help based interventions (< 90 min of therapist

support) and five studies reported on minimal contact therapies. The meta-analysis noted significant benefits of low-intensity mindfulness/acceptance-based interventions relative to control participants for depression and anxiety with small to medium effect sizes (Cavanagh et al., 2014). Building on the promise that these interventions offer, the WHO has developed an ACT-based self-help intervention called 'Self-help Plus' (SH+). This intervention has been piloted amongst Sudanese Refugees living in Northern Uganda, with the intention of adapting it for use amongst Syrian Refugees in the Middle-East (Epping-Jordan et al., 2016).

The fact that low-intensity/self-help interventions do not rely on the presence of a skilled psychotherapist creates opportunities for flexibility in how these interventions are delivered. The internet is one mode of delivery that may be particularly important for these forms of intervention. Access to the internet in LMIC is growing rapidly and can reach beyond the limited capacity of the comparatively small number of available trained psychotherapists. However, efforts aimed at harnessing technology to make psychological interventions more widely available should be balanced with a need to retain, where possible, the key aspects of the one-to-one psychotherapeutic experience that contribute to both the efficacy and acceptability of the psychotherapies on which the low-intensity interventions are often based. Research has highlighted that so-called 'non-specific' aspects of psychotherapy (e.g., alliance, empathy, expectations) are important for influencing outcome (Kazdin, 1979; Wampold, 2015). Indeed, Wampold (2015) suggested that 'psychotherapy is a special case of a *social* healing practice' (p. 270, emphasis added). As such, efforts aimed at globally disseminating psychological interventions need to be balanced against an appreciation that the psychotherapeutic relationship can serve as an important vehicle for change. Rather

than a standardized platform that offers a 'recipe-book' approach to working with distress, online and program-delivered interventions will benefit from having the necessary sophistication to respond to the wealth of verbal *and* non-verbal cues that clients are providing about the nature of their distress and how it is impacting on him/her.

Contextual Behavioral Science rests on a solid theoretical base of evolutionary and behavioral principles, and has a broad range of therapeutic applications. CBS interventions (such as ACT and FAP) place specific emphasis on attending to clients' in-session affective responses and using the therapeutic relationship as a context for identifying patterns of experiential avoidance; exploring the inextricable link between distress and values, and building a courageous willingness in clients to live a life that is consistent with their values and the sense of meaning that these values bring. CBS therapists appreciate how crucial the interactions with clients can be for facilitating the spontaneous, synchronous deriving of new relations, and reinforcing efforts to move towards values. For example, FAP is built on a framework in which the moment-to-moment therapeutic relationship is used to directly shape more effective behavior over time. Consideration needs to be given to how the sensitivity and responsiveness of online interventions can be tailored to individual users. CBS therapists are well placed to make an important contribution to debates about the merits/demerits of program-led interventions, and to inform the design and development of these interventions.

There is growing recognition of the important role that implementation science research has for understanding what factors related to interventions, individuals and

systems may influence the process of transitioning efficacious interventions to scalable dissemination of those therapies (Murray, Dorsey, Bolton, Jordans, Rahman, Bass & Verdeli, 2011, Betancourt & Chambers, 2016, De Silva & Ryan, 2016). By definition, CBS is well placed to inform efforts associated with the uptake, adaptation, and sustainable use of psychological interventions in LMIC. CBS begins with the assumption that efforts to understand behavior must take the context into account. As such, CBS can make an important contribution to the need to 'shine a lens on the important context-determined use of effective interventions, the ongoing study of local adaptation, and the collection of shared lessons from which global mental health can benefit' (Betancourt & Chambers, 2016; P.100). By drawing on frameworks such as Normalization Process Theory (http://www.normalizationprocess.org) [and the emphasis that this places on the need for: 1) coherence 2) cognitive participation 3) collective action and 4) reflexive monitoring] CBS practitioners and researchers can play an important role in efforts to implement efficacious interventions in low resource settings.

4.2. The Cross-cultural Applicability of CBS

As highlighted earlier, there is a need for GMH initiatives to be sensitive to local needs and developed or adapted to reflect the local cultural context (White & Sashidharan, 2014; Ventevogel, 2014). It has been suggested that CBS approaches can be applied across different cultural contexts because they rest on broad principles of how people behave and adapt to various contexts (Hayes, Muto, & Masuda, 2011; Hayes, Pistorello, & Levin, 2012; Hayes & Toarmino, 1995; Stewart et al., 2016). The cross-cultural credentials of CBS interventions (such as ACT) rest on the idea that the process of conducting 'functional analyses' of behaviors, promotes sensitivity

to cultural knowledge and local context, rather than being based solely on the topographical features of these behaviors (Hayes & Toarmino, 1995). ACT draws on understanding from *Relational Frame Theory* (RFT; Hayes, Barnes-Holmes, Roche, 2001), which proposes that humans learn through observation to verbally relate stimuli from particular perspectives. Research has show that deictic relations (i.e. the distinctions between here/there, now/then and I/you) are central to situating people in the contexts in which behaviors occur (McHugh, Barnes-Holmes, Barnes-Holmes, Whelan & Stewart, 2007). It is suggested that the 'I/you' distinction facilitates a sense of self that 'is inherently social, expansive, and interconnected' (Hayes et al., 2012). This is a perspective not unlike the indigenous Southern African concept of personhood captured in the concept of *unbuntu* (a Ngani Bantu language term), which can be translated as 'humanity towards others', but is regarded as a philosophical perspective that states that: 'A person is a person through other people' (Eze, 2016).

The emphasis that ACT places on exploring individual's 'values' has also been highlighted as an aspect of the approach that boosts its cross-cultural credentials (White & Ebert, 2014). Values have been defined as: 'learned, relatively enduring, emotionally charged, epistemologically grounded and represented moral conceptualizations that assist us in making judgments and in preparing us to act...Values can be grounded in the cultural heritage of a society and pervasively housed within the institutions of the society.' (Frey, 1994, P.19). From the perspective of ACT, values 'are freely chosen, verbally constructed consequences of patterns of action that establish intrinsic qualities of action as reinforcers in the present' (Hayes et al., 2011a; P236). ACT purports to empower individuals to commit to value-consistent behaviors (which can be shaped by the cultural context) whilst

demonstrating a courageous willingness to experience challenging thoughts and emotions. So, although values may vary from culture to culture and from individual to individual, the functional contextual principles and processes that ACT espouses in relation to an individual's values 'allows a natural cultural adaptation that is sensitive to the individual and yet maintains contact with underlying behavioral processes' (Hayes, Muto, & Masuda, 2011; P236). Pasillas and Masuda (2014) suggested that the way in which ACT focuses on the 'idiographic, functional, and contextual nature of therapeutic work' has the potential to minimize the negative impact of cultural biases (P.110).

A number of research trials have evaluated the feasibility and efficacy of ACT in LMIC for a variety of physical and mental health related issues. These include studies undertaken in Iran (Mo'tamedi, Rezaiemaram & Tavallaie, 2012, Hosseinaei, Ahadi, Fata, Heidarei & Mazaheri, 2013, Hoseini, Rezaei & Azadi, 2014, Mohabbat-Bahar Maleki-Rizi, Akbari & Moradi-Joo, 2015), South Africa (Lundgren, Dahl, Melin & Kies, 2006), and India (Lundgren, Dahl, Yardi & Melin, 2008). Consistent with the task-shifting initiatives advocated by proponents of GMH, Stewart, White, Ebert, Mays, Nardozzi and Bockarie (2016) reported on the feasibility of training health workers and teachers to deliver ACT interventions in Sierra Leone. Recipients of the training demonstrated significant increases in psychological flexibility and satisfaction with life between pre-workshop and 3-month post-workshop assessments (Stewart et al., 2016). Liu et al. (2016) conducted a systematic review of research investigating mental health training for health workers in Africa. The review found that although changes in participants' knowledge and attitudes about mental illness were routinely measured, skills and practice were less frequently evaluated. The

authors of the reviews noted that the methodological rigor of the 37 studies that met the inclusion criteria was generally poor. Importantly, the review emphasized the need to build capacity and competencies in Africa to conduct rigorous research into the effects of mental health training, and for specific learning objectives to be identified that reflect the key competencies that the training should address (e.g., clinical skills, advocacy, scholarship and communication) (Liu et al., 2016). Only two studies (Chibanda, Mesu, Kajawu, Cowan, Araya, & Abas, 2011, Jenkins, Othieno, Okeyo, Kaseje, Aruwa, Oyugi, Bassett & Kauye, 2013) assessed how mental health training impacted the clinical outcomes of people that the trained individuals had worked with. Both studies revealed significant improvements in the people receiving the intervention that the workers were trained in. All of the studies reviewed by Liu et al. (2016) were published in English – studies were completed in a total of 11 African countries, 10 of which were Anglophone. Moving forward, there is a need for further research in this area, particularly in linguistically diverse settings, to assess the generalizability of such interventions across language differences.

4.3. Trans-diagnostic Potential of CBS

Bockting et al.'s (2016) recognition that 'trans-diagnostic interventions' may have wider applicability and greater feasibility for use in LMIC. Similarly, Murray et al. (2014) noted that trans-diagnostic approaches have greater ecological validity because they provide scope for addressing high levels of comorbidity evident in people experiencing mental health difficulties. Rather than being a symptom-based approach, CBS (such as ACT) interventions instead target psychological inflexibility which develops when efforts to avoid threat serve to prevent people engaging in behaviors that are consistent with their values. As such, CBS interventions have been applied to

a broad range of different presenting problems including chronic pain, anxiety disorders, psychosis, addictions, depression, and eating disorders (A-Tjak et al., 2015). The trans-diagnostic potentiality of CBS interventions, and the focus they allocate to distress rather than 'symptoms' and 'syndromes', may offer promise for addressing the ethical 'elephant in the room' relating to the seemingly *ad infinitum* preoccupation with conducting and publishing mental health-related research that employs diagnostic categories that lack sufficient validity and reliability in high-income countries, never mind in culturally diverse low- and middle-income countries.

4.4. A Focus on Mental Health and Wellbeing

The WHO (1946) constitution states that 'Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'. White, Imperiale and Perera (2016) highlighted that, to date, GMH initiatives have tended to focus predominantly on indicators of mental disorders and disability, and have been characterized by a lack of sophistication in determining what constitutes a 'good outcome' for people experiencing mental health difficulties. In the absence of greater clarity on this issue, White (2017) suggested that GMH initiatives risk falling foul of what George Santayana (1905) referred to as 'redoubling your efforts when you have forgotten your aim'. White et al., (2016) highlighted that there is a need for GMH initiatives to address the 'recovery gap' i.e. the difference between the types of outcomes that professionals and services might prioritize and the outcomes that individuals with a lived experience of mental health difficulties might prioritize.

To address this issue, White et al. (2016) proposed that the *Capabilities Approach* (CA), a human development approach, could be used to guide GMH initiatives. The

CA has the advantage of emphasizing the importance of interventions being shaped by understanding: 1) What individuals in particular settings value as being important to how they want to live their lives, and 2) The personal and structural factors that can promote, or hinder, individuals' freedom to realize their capabilities and engage in valued forms of being and doing (White et al., 2016; P8). Clear synergies exist between ACT and CA (White et al., 2016). ACT interventions [including self-help ACT interventions (Fledderus, Bohlmeijer, Pieterse & Schreurs, 2012)] have been shown to reduce distress whilst also boosting subjective wellbeing. Most recently, Trompetter, Lamers, Westerhof, Fledderus and Bohlmeijer (2017) (in *post hoc* analyses of data that were gathered during a randomized controlled trial) reported that a ACT-based self-help intervention produced changes in both psychopathology (i.e. depression and anxiety) and mental wellbeing (as assessed by the Mental Health Continuum-Short Form). Further research investigating the impact that CBS interventions have for enhancing capabilities and promoting mental wellbeing is merited.

4.5. Building 'Communities of Support' – PROSOCIAL and Beyond

It has been suggested that GMH initiatives need to move beyond a focus on the individual and instead harness the collective strengths that group collaboration can bring. For example, Jansen, White, Hogwood, Jansen, Gishoma, Mukamana and Richters (2015) highlighted a need to harness the concept of 'community' as a therapeutic vehicle for supporting healing, as opposed to more narrowly considering community-based approaches as a way of accessing greater numbers of individuals. Consistent with these insights, prominent CBS researchers have been involved in developing the PROSOCIAL approach (https://www.prosocial.world) which utilizes

Nobel Laureate Elinor Ostrom's, 'design principles' to help groups address *social dilemma* [i.e. 'settings where uncoordinated decisions motivated by the pursuit of individual benefits generate suboptimal payoffs for others and for self in the long run' (Ostrom, 2014, P.101-102)]. One example of the PROSOCIAL approach is provided by the work of *commit and act*, a not-for-profit organization in Sierra Leone, who used it to support local communities to limit the transmission of Ebola Virus Disease during the outbreak in in Sierra Leone (Stewart, Ebert & Bockarie, 2017). Reflecting the growing interest in how ecological factors such as climate change impact on mental health, White (2017) highlighted that the PROSOCIAL approach can be used to support people in different parts of the world to engage in valued forms of being and doing whilst simultaneously promoting environmental justice.

Whilst the formation of 'communities of support' that adhere to PROSOCIAL principles may be advantageous for responding to acute episodes of distress that people may experience, they may equally provide important opportunities for promoting wellbeing and preventing mental health difficulties emerging. There is growing evidence of the toxic effect that fragmented or deprived community life can have on people's mental health. For example, McManus, Meltzer, Brugha and Bebbington (2009) indicated that living in neighborhoods that are deprived, having very low income, being subjected to poverty, racism and/or childhood abuse are all associated with an increased risk of depression and schizophrenia. In recognition of the important role that social factors can play in mental health, the WHO (2014) published a report entitled *The Social Determinants of Mental Health*. Based on a systematic review, Leamy, Bird, Le Boutillier, Williams and Slade (2012) proposed a theoretical framework that highlighted key themes for facilitating recovery from

mental health difficulties, which included: *Connectedness, Hope, Identity, Meaning* and *Empowerment* (CHIME). Equally, it could be argued that making these factors central to individuals' community life may prevent mental health difficulties emerging in the first place.

Sir Michael Marmot, Professor of Epidemiology at University College London, stated that '…the health and wellbeing of people is heavily influenced by their local community and social networks. Those networks and greater social capital provide a source of resilience' (Foot, 2012 P3). Indeed, joining local groups (especially sports and religious groups), and having social contact and trust with neighbors, have been highlighted are as important assets for both physical and mental wellbeing (Foot, 2012). So interactions that people have in the spaces and places were they lives their lives can serve to prevent mental health difficulties emerging. This can include school-based activities such as the *Dream a World Therapy Program* in Jamaica (Hickling, 2017), which aims to support the wellbeing of high-risk primary school children in impoverished, disadvantaged, inner-city communities. There is growing evidence that CBS-informed community programs and policy initiatives can contribute to the amelioration of social problems and the prevention of mental health difficulties (for examples see: Biglan, 2015). It will be important to explore the potential that these kinds of initiatives can have for providing cost-effective ways of preventing mental health difficulties emerging in LMIC.

4.6. Scalability Through Technology

It is increasingly clear that technology will be an important factor in determining how mental health interventions are delivered in the future (Fairburn & Patel, 2017). To

date the majority of ‘digital’ interventions have been based on Cognitive Behavioral Therapy (Andersson, 2014). There is marked variation in the format, functionality and mode of delivery that digital interventions use (Fairburn & Patel, 2017). It has been shown that digital interventions work best if accompanied by follow-up support from a trained person, and that these could be as effective as face-to-face psychotherapy (although there are some methodological issues with the research that has been conducted to date) (Fairburn & Patel, 2017). Naslund, Aschbrenner, Araya, Marsch, Unützer, Patel and Bartels (2017) conducted a systematic review of 49 studies that used digital technology for either directly addressing mental disorders, or for supporting the training of health workers to address mental disorders. Whilst acknowledging that these digital forms of disseminating psychological interventions have great potential for addressing workforce capacity issues and empowering individuals and communities to access support they require, it was highlighted that there has been comparatively little formal evaluation of the effectiveness of these approaches in low resource settings.

There is a growing body of research suggesting that web-based ACT interventions appear to be acceptable and feasible for a range of presenting problems (Bricker, Wyszynski, Comstock, & Heffner, 2013, Levin, Pistorello, Seeley & Hayes, 2014, Trompetter, Bohlmeijer, Veehof & Schreurs, 2015; Fiorillo, McLean, Pistorello, Hayes & Follette, 2016; Levin, Haeger, Pierce & Twohig, 2017). The strongest evidence for the efficacy of web-based ACT interventions to date appears to be in the treatment of depression (Brown, Glendenning, Hoon, & John, 2016; Pots, Fledderus, Meulenbreek, ten Klooster, Schreurs & Bohlmeijer, 2016). Vilardaga, Bricker and McDonell (2014) highlighted important opportunities that exist for utilizing mobile

technologies, such as how smart phones have been used in ACT and how this can help supplement one-to-one therapy. There has also been growing interest in the development of ACT-based apps for mobile technology. Pierce, Twohig and Levin (2016) conducted a survey of members of the professional association for ACT professionals, the Association for Contextual Behavioral Science (ACBS), to elicit views about the potential costs and benefits of using ACT-based apps. Results indicated that respondents felt that apps can be helpful for supporting between-session practice of ACT-related processes. However, a lack of clear consensus on which apps to choose, potential ethical issues relating to data storage, and concerns about the effectiveness of the content provided were highlighted as important issues by respondents (Pierce et al., 2016). These concerns, and the aforementioned need to enhance the sensitivity and empathic responsiveness of online/web-based interventions to the idiosyncrasies of individual's presentations of distress, will require careful consideration.

5. Moving Forward

In terms of specific next steps, the following six recommendations are proposed for advancing the role that CBS can contribute to GMH. CBS practitioners and researchers should:

1. Support the development of researchers in LMIC (through on-line resources and in-country training workshops) to build capacity for conducting CBS research in these settings.
2. Conduct further research to investigate the adaptation, acceptability and efficacy of CBS interventions for improving the mental health and wellbeing of people living in LMIC. This should include a focus on how the PROSOCIAL

Development Team (https://www.prosocial.world) can assist with building communities of support in LMIC that are committed to working collaboratively to enhance wellbeing.

3. Engage in interdisciplinary collaboration with social scientists and anthropologists to explore the way in which notions of 'mental health' and 'illness' are culturally situated, and how local beliefs and practices can be integrated into protocols and assessment measures aimed at supporting individuals' to engage in valued forms of being and doing. This should include the completion of qualitative and ethnographic research aimed at eliciting information about what people living in particular contexts regard as being of value to them, and how efforts to engage in behaviors consistent with these values may be supported and/or thwarted.
4. Facilitate the equitable exchange of knowledge between the Global North and the Global South about issues relevant for mental health and wellbeing. The *ACBS* has a *Developing Nations Committee* that provides a good platform for knowledge exchange between various practitioners conducting this work. Regular webinars could be organized by the committee to facilitate knowledge exchange activity. It will be important to ensure that these events have good representation from both the Global South and the Global North.
5. Build training capacity for empirically supported CBS approaches in LMIC – this might involve exploring ways of increasing the dissemination of online training resources, but will also require the establishment of supervision networks. The *ACBS* (https://contextualscience.org) currently offers scholarship opportunities to facilitate people from LMIC to attend the annual *ACBS World Conferences*. In addition, 'ACBS peer-reviewed trainers' have travelled to LMIC to deliver in-country training courses. These targeted trainings can reach larger numbers of

people, but requires close collaboration and consultation with local stakeholders to ensure that the training is tailored to local needs.

6. Play an active role in contributing to the development and evaluation of sophisticated program-led interventions that are sensitive to the nuances of emotional expression in different cultural contexts, and capable of responding appropriately to these at an individual level.

Clearly CBS is not a panacea that will cure all 'Global Mental Health' ills. Important questions remain about the extent to which CBS interventions are valid across different cultural contexts, and whether CBS can help inform efforts to improve access to mental health interventions. Although the initial indications are promising, further research activity is required to address these important empirical issues. What we are calling for is time, effort, and resource to be invested in exploring the opportunities that exist for CBS to make a contribution to GMH, and to ultimately make a difference for people living in LMIC who are experiencing distress.

Declarations of Interest

Ross G. White is a co-investigator on a clinical trial evaluating the efficacy and cost-effectiveness of using an ACT-based self-help intervention to support Sudanese refugees in Uganda (Self Help +): http://www.elrha.org/map-location/who-psychosocial-selfhelp-call2/

Acknowledgments

None

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

A-Tjak, J. G. L., Davis, M. L., Morina, N., Powers, M. B., Smits, J. A. J., & Emmelkamp, P. M. G. (2015). A meta-analysis of the efficacy of acceptance and commitment therapy for clinically relevant mental and physical health problems. Psychotherapy and Psychosomatics, 84(1), 30-36.

Andersson, G. (2014). The internet and CBT: A clinical guide. Boca Raton: CRC Press.

Betancourt, T. S., & Chambers, D. A. (2016). Optimizing an era of global mental health implementation science. JAMA psychiatry, 73(2), 99-100.

Biglan, A. (2015). The Nurture Effect: How the Science of Human Behavior Can Improve Our Lives and Our World. New Harbinger Publications. Oakland, California, US.

Bockting, C. L. H., Williams, A. D., Carswell, K., & Grech, A. E. (2016). The potential of low-intensity and online interventions for depression in low-and middle-income countries. Global Mental Health, 3.

Bricker, J., Wyszynski, C., Comstock, B., & Heffner, J. L. (2013). Pilot randomized controlled trial of web-based acceptance and commitment therapy for smoking cessation. Nicotine and Tobacco Research, 15(10), 1756–1764

Brown, M., Glendenning, A. C., Hoon, A. E., & John, A. (2016). Effectiveness of Web-Delivered Acceptance and Commitment Therapy in Relation to Mental Health and Well-Being: A Systematic Review and Meta-Analysis, J Med Internet Res,18(8):e221.

Cavanagh, K., Strauss, C., Forder, L., & Jones, F. (2014). Can mindfulness and acceptance be learnt by self-help? A systematic review and meta-analysis of mindfulness and acceptance-based self-help interventions. Clinical psychology review, 34(2), 118-129.

Chibanda, D., Mesu, P., Kajawu, L., Cowan, F., Araya, R., Abas, M.A. (2011). Problem-solving therapy for depression and common mental disorders in Zimbabwe: piloting a task-shifting primary mental health care intervention in a population with a high prevalence of people living with HIV. BMC Public Health, 11, 828.

De Silva, M. J., & Ryan, G. (2016). Global mental health in 2015: 95% implementation. The Lancet Psychiatry, 3(1), 15-17.

Epping-Jordan, J.E., Harris, R., Brown, F.L., Carswell, K., Foley, C., García-Moreno, C., Kogan, C., van Ommeren, M. (2016). Self-Help Plus (SH+): a new WHO stress management package. World Psychiatry, 15(3), 295-296.

Eze, M. (2016). Intellectual history in contemporary South Africa. Springer.

Fairburn, C. G., & Patel, V. (2014). The global dissemination of psychological treatments: a road map for research and practice. American Journal of Psychiatry, 171(5), 495-498.

Fairburn, C. G., & Patel, V. (2017). The impact of digital technology on psychological interventions and their dissemination. British Journal of Psychiatry, 88, 19-25.

Fink, J. (1999). How to use computers and cyberspace in the clinical practice of psychotherapy. Northvale, NJ: Aronson.

Fiorillo, D., McLean, C., Pistorello, J., Hayes, S. C., & Follette, V. M. (2016). Evaluation of a Web-based Acceptance and Commitment Therapy Program for Women with Trauma-related Problems: A Pilot Study. Journal of Contextual Behavioral Science.

Fledderus, M., Bohlmeijer, E. T., Pieterse, M. E., & Schreurs, K. M. G. (2012). Acceptance and commitment therapy as guided self-help for psychological distress and positive mental health: a randomized controlled trial. Psychological Medicine, 42, 485-495.

Foot (2012). What makes us healthy? The asset approach in practice: evidence, action, evaluation.
http://www.assetbasedconsulting.co.uk/uploads/publications/WMUH.pdf

Frey, R. (1994). Eye Juggling: Seeing the World Through a Looking Glass and a Glass Pane (A workbook for clarifying and interpreting values). University Press of America: Lanham, New York, London.

Hayes, S. C., & Toarmino, D. (1995). If behavioral principles are generally applicable, why is it necessary to understand cultural diversity? The Behavior Therapist, 18, 21–23.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). Acceptance and commitment therapy: An experiential approach to behavior change. Guilford Press.

Hayes, S. C., Barnes-Holmes, D., & Roche, B. (2001). Relational frame theory: A post-Skinnerian account of human language and cognition. New York: Plenum Press.

Hayes, S. C., Muto, T., & Masuda, A. (2011). Seeking cultural competence from the ground up. Clinical Psychology: Science and Practice, 18, 232–237.

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and Commitment Therapy as a unified model of behavior change. The Counseling Psychologist, 40, 976–1002.

Hayes, S. C., Barnes-Holmes, D., & Wilson, K. G. (2012a). Contextual behavioral science: Creating a science more adequate to the challenge of the human condition. *Journal of Contextual Behavioral Science*, *1*(1), 1-16.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (2012b). Acceptance and commitment therapy: The process and practice of mindful change (2nd ed). New York: Guilford Press.

Hickling, F. W. (2017). *Taking the Psychiatrist to School: The Development of a Dream-A-World Cultural Therapy Program for Behaviorally Disturbed and Academically Underperforming Primary School Children in Jamaica*. In R. G. White, S. Jain, D. M. Orr, U. Read (Eds.) The Palgrave Handbook of Sociocultural Perspectives on Global Mental Health (pp. 609-631). Palgrave Macmillan UK.

Hoseini, S. M., Rezaei, A. M., & Azadi, M. M. (2014). Effectiveness of Acceptance and Commitment Group Therapy on the self-management of Type 2 diabetes patients. Journal of Clinical Psychology, 5, 55–64.

Hosseinaei, A., Ahadi, H., Fata, L., Heidarei, A., & Mazaheri, M. M. (2013). Effects of group Acceptance and Commitment Therapy (ACT)-based training on job stress and burnout. Iranian Journal of Psychiatry and Clinical Psychology, 19, 109–120.

Jansen, S., White, R. G., Hogwood, J., Jansen, A., Gishoma, D., Mukamana, D., & Richters, A. (2015). The ‘‘treatment gap’’ in global mental health reconsidered: sociotherapy for collective trauma in Rwanda. European journal of psychotraumatology, 6.

Jenkins, R., Othieno, C., Okeyo, S., Kaseje, D., Aruwa, J., Oyugi, H., Bassett. P., Kauye, F. (2013). Short structured general mental health in service training

programme in Kenya improves patient health and social outcomes but not detection of mental health problems—a pragmatic cluster randomised controlled trial. Int J Ment Health Syst, 7, 25.

Joinson, A. (1998). Causes and implications of disinhibited behavior on the internet. In J. Gackenbach (Ed.) Psychology and the Internet: Intrapersonal, Interpersonal, and Transpersonal Implications, pp. 43-60. San Diego: Academic Press.

Kakuma, R., Minas, L., van Ginneken, N., Dal Poz, M. R., Desiraju, K., … Scheffler, R. M. (2011). Human resources for mental health care: current situation and strategies for action. The Lancet, 378, 1654-1663.

Kazdin, A. E. (1979). Nonspecific treatment factors in psychotherapy outcome research.

Kohlenberg, R. J., & Tsai, M. (1994). Functional analytic psychotherapy: A radical behavioral approach to treatment and integration. Journal of Psychotherapy Integration, 4(3), 175.

Kohlenberg, R. J., & Tsai, M. (2012). Functional analytic psychotherapy: Creating intense and curative therapeutic relationships. Springer Science & Business Media.

Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. The British Journal of Psychiatry, 199(6), 445-452.

Levin, M. E., Pistorello, J., Seeley, J. R., & Hayes, S. C. (2014). Feasibility of a prototype web-based Acceptance and Commitment Therapy prevention program for college students. Journal of American College Health, 62(1), 20–30.

Levin, M. E., Haeger, J. A., Pierce, B. G., & Twohig, M. P. (2017). Web-based Acceptance and Commitment Therapy for Mental Health Problems in College Students: A Randomized Controlled Trial. Behavior Modification, 41(1), 141-162

Liu, G., Jack, H., Piette, A., Mangezi, W., Machando, D., Rwafa, C., ... & Abas, M. (2016). Mental health training for health workers in Africa: a systematic review. The Lancet Psychiatry, 3(1), 65-76.

Lundgren, T., Dahl, J., Melin, L., & Kies, B. (2006). Evaluation of Acceptance and Commitment Therapy for drug refractory epilepsy: a randomized controlled trial in South Africa. Epilepsia, 47, 2173–2179.

Lundgren, T., Dahl, J., Yardi, N., & Melin, J. (2008). Acceptance and Commitment Therapy and yoga for drug refractory epilepsy: a randomized controlled trial. Epilepsy and Behavior, 13, 102–108.

McHugh, L., Barnes-Holmes, Y., Barnes-Holmes, D., Whelan, R., & Stewart, I. (2007). Knowing me, knowing you: Deictic complexity in false-belief understanding. The Psychological Record, 57, 533–542.

McManus S, Meltzer H, Brugha T, Bebbington PE (2009) Adult Psychiatric Morbidity in England, 2007: Results of a Household Survey. London: The NHS Information Centre.

Mohabbat-Bahar, S., Maleki-Rizi, F., Akbari, M. E., & Moradi-Joo, M. (2015). Effectiveness of group training based on acceptance and commitment therapy on anxiety and depression of women with breast cancer. Iranian journal of cancer prevention, 8(2), 71.

Mo'tamedi, H., Rezaiemaram, P., & Tavallaie, A. (2012). The effectiveness of a group- based acceptance and commitment additive therapy on rehabilitation of female outpatients with chronic headache: preliminary findings reducing 3 dimensions of headache impact. Headache: The Journal of Head and Face Pain, 52, 1106–1119.

Murray, L. K., Dorsey, S., Bolton, P., Jordans, M. J., Rahman, A., Bass, J., Verdeli, H. (2011). Building capacity in mental health interventions in low resource countries: an apprenticeship model for training local providers. International Journal of Mental Health Systems 5, 30.

Murray, L. K., Dorsey, S., Haroz, E. E., Lee, C., Alsiary. M. M, Haydary, A., Weiss, W.M., & Bolton, P. (2014). A common elements treatment approach for adult mental health problems in low- and middle-income countries. Cognitive and Behavioral Practice 21, 111–123.

Naslund, J. A., Aschbrenner, K. A., Araya, R., Marsch, L.A., Unutzer, J., Patel, V., Bartels, S. J. (2017). Digital technology for treating and preventing mental disorders in low-income and middle-income countries: A narrative review of the literature. *The Lancet Psychiatry*, 4, 486–500.

Ostrom, E. (2014). A polycentric approach for coping with climate change. Ann. Econ. Finance, 15(1), 71-108.

Owen, I. (1995). Power, boundaries, intersubjectivity. British Journal of Medical Psychology, 68(2), 97-107.

Pasillas, R. M., & Masuda, A. (2014). Cultural competency and Acceptance and Commitment Therapy In: A. Masuda (Ed.), Mindfulness & Acceptance in Multi-cultural Competency. USA: Context Press.

Patel, V., & Prince, M. (2010). Global mental health: a new global health field comes of age. JAMA, 303(19), 1976-1977.

Patel, V. (2014). Why mental health matters to global health. Transcultural psychiatry, 51(6), 777-789.

Pierce, B., Twohig, M. P., & Levin, M. E. (2016). Perspectives on the use of acceptance and commitment therapy related mobile apps: Results from a survey of students and professionals. Journal of Contextual Behavioral Science, 5(4), 215-224.

Pots, W. T. M., Fledderus, M., Meulenbreek, P. A. M., ten Klooster, P. M., Schreurs, K. M. G., & Bohlmeijer, E. T. (2016). Acceptance and Commitment Therapy as a web-based intervention for depressive symptoms: Randomised Controlled Trial. *British Journal of Psychiatry*, 208, 69-77.

Santayana, G. (1905). *Life of reason: reason in common sense*. New York: Charles Scribner's Sons.

Saxena, S., Thornicroft, G., Knapp, M., & Whiteford, H. (2007). Resources for mental health: Scarcity, inequity, and inefficiency. The Lancet, 370, 878–889.

Stewart, C., White, R. G., Ebert, B., Mays, I., Nardozzi, J., & Bockarie, H. (2016). A preliminary evaluation of Acceptance and Commitment Therapy (ACT) training in Sierra Leone. Journal of Contextual Behavioral Science, 5(1), 16-22.

Stewart, C., Ebert, B., & Bockarie, H. (2017). commit and act in Sierra Leone. In: White, R. G., Jain, S., Orr, D., Read, U. (Eds.). The Palgrave Handbook of Sociocultural Perspectives on Global Mental Health (pp. 657-678). Palgrave Macmillan UK.

The Lancet Series on Global Mental Health (2007). The Lancet. (http://www.thelancet.com/series/global-mental-health) Retrieved 10.06.17.

The Lancet Series on Global Mental Health (2011). The Lancet. (http://www.thelancet.com/series/global-mental-health-2011) Retrieved 10.06.17.

Trompetter, H. R., Bohlmeijer, E. T., Veehof, M. M., & Schreurs, K. M. (2015). Internet- based guided self-help intervention for chronic pain based on acceptance and commitment therapy: A randomized controlled trial. Journal of Behavioral Medicine, 38(1), 66–80.

Trompetter, H. R., Lamers, S. M. A., Westerhof, G. J., Fledderus, M., & Bohlmeijer, E. T. (2017). Both positive mental health and psychopathology should be monitored in psychotherapy: Confirmation for the dual-factor model in acceptance and commitment therapy. Behavior Research and Therapy, 91, 58-63.

Ventevogel, P. (2014). Integration of mental health into primary healthcare in low-income countries: Avoiding medicalization. International Review of Psychiatry, 26(6), 669-679.

Vilardaga, R., Bricker, J. B., & McDonell, M. G. (2014). The promise of mobile technologies and single case designs for the study of individuals in their natural environment. Journal of contextual behavioral science, 3(2), 148-153.

Wampold, B. E. (2015). How important are the common factors in psychotherapy? An update. World Psychiatry, 14(3), 270-277.

Watters, C. (2017). Three challenges to a life course approach in global mental health: epistemic violence, temporality and forced migration. In R. G. White, J. Sumeet, D.

M. Orr, & U. Read (Eds.) The Palgrave Handbook of Sociocultural Perspectives on Global Mental Health (pp. 237-256). Palgrave Macmillan UK.

White, S. C., & Jha, S. (2014). The Ethical Imperative of Qualitative Methods: Developing Measures of Subjective Dimensions of Well-Being in Zambia and India. Ethics and Social Welfare, 8(3), 262-276.

White, R. G., and Ebert, B. (2014). *Working globally, thinking locally: providing psychosocial intervention training in Sierra Leone.* Clinical Psychology Forum, 258, 41-45

White, R. G., & Sashidharan, S. P. (2014). Towards a more nuanced global mental health. British Journal of Psychiatry, 204, 415-417.

White, R. G., Imperiale, M. G., & Perera, E. (2016). The Capabilities Approach: Fostering contexts for enhancing mental health and wellbeing across the globe. Globalization and Health, 12(1), 16.

White, R. G. (2017). Mental Wellbeing in the Anthropocene: Socio-ecological Approaches to Capability Enhancement. Transcultural Psychiatry (in press).

White, R., Jain, S., Orr, D., & Read, U. (2017). Situating global mental health: socio-cultural perspectives. In (Eds.) Ross G. White, Sumeet Jain, David M. R. Orr and Ursula M. Read. The Palgrave Handbook of Socio-cultural Perspectives on Global Mental Health. New York: Palgrave.

World Bank (2015) http://data.worldbank.org/income-level/low-and-middle-income

World Health Organization (1946). *Constitution of the World Health Organization*. Geneva, Switzerland: WHO.

World Health Organization (2014). *Social Determinants of Mental Health*. Geneva, Switzerland: WHO.