Reshaping Mental Health Through the Virtues: Promises and Challenges

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I. Introduction: Aims and Methods

The idea that virtue is related to health—and in particular mental health—has a venerable history in Western thought, dating back to Plato, Aristotle and the Stoics. Yet virtue has not, for the most part, been commonplace in the language and the practice of psychiatry and mental health care more broadly. Since the advent of the positive psychology movement, however, there have been more intense efforts to not only verify the promise of virtue for mental health empirically, but also to develop virtue-based psychotherapeutic interventions. These findings, if interpreted rigorously, might also add another dimension to long-running debates about the nature of mental illness and mental health.

This topic of study invariably requires a multidisciplinary, as both philosophical and clinical considerations are raised by the relationship between virtue and mental health. We therefore sought to conduct a literature review[1] on journal articles from across different disciplines that related to the following research questions:

1. What is the role of virtue and character traits in relation to definitional and diagnostic questions about mental health?
2. What is the role of virtue and character traits in relation to the practice of mental health care?

In order to be as comprehensive as possible, we took a broad view of what counts as mental health as well as virtue. Nonetheless, papers relating to the virtues of mental health practitioners and caregivers were excluded as these were not deemed central to this study, except where such virtues related to particular therapeutic interventions.

The following databases were searched: Pubmed, Embase, Medline, CINAHL and JSTOR. The following search terms were employed: (psychiatry OR psychology OR 'mental health' OR 'mental illness') AND (virtue OR flourishing OR *eudaimonia* OR courage OR temperance OR patience OR honesty OR friendliness OR modesty OR gratitude OR humility OR awe). The search was done on 3rd September 2018, and had no time limits.

The search yielded a total of 2,502 results across all five databases, although this figure includes papers that appeared in more than one database. All abstracts were screened and the search was narrowed to 340 papers. Full texts were then obtained and screened, and in the end 234 papers were found to be relevant to our study.

II. Findings

Although this study was not limited to positive psychology research, studies from this movement formed the bulk of the final selection of papers. On the whole, these studies suggest that virtues have

[1] A more extensive paper, exploring the full philosophical and clinical implications of this report, is currently under construction.

a positive correlation with mental health, with some also suggesting a positive association. Certain virtues were more frequently investigated than others in the literature. We will focus on those that yielded the most substantial findings.

Temperance

Temperance is a virtue that "protects against excess", and is conceptually linked to character traits such as modesty and self-regulation (Guse and Hudson, 2014). It is negatively correlated with depressive symptoms, perceived stress (Duan, 2016), distress (Shoshani and Slone, 2016) and with smartphone and internet addiction (Choi *et al*., 2015). Temperance was also shown to correlate positively with satisfaction with life (Hanks *et al*., 2014) and flourishing (Duan, 2016).

Nonetheless, in Logan *et al*.'s study (2010), although temperance was found to be higher in non-drinkers, compared to individuals drinking alcohol, it did not separate those who drank alcohol from heavy drinkers. In another study, depressed or anxious patients in a psychiatric rehabilitation association had lower mean scores of temperance, but this became insignificant in regression analysis. (Ho *et al*., 2016c).

Restraint was found to be a predictor of social well-being (Lim, 2015), while self-regulation correlated with satisfaction with life (Hanks *et al*. 2014; Martínez-Martí and Ruch, 2014) and psychological well-being, but not with subjective well-being (Hausler *et al*., 2017). Another study found that trait self-control correlated with subjective well-being and life satisfaction, with the effect on life satisfaction mediated by affect and the ability to balance goal conflicts (Hofmann *et al*., 2014). Self-regulation (Martínez-Martí and Ruch, 2014) and trait self-control (Hofmann *et al*., 2014) were also found to correlate with positive affect and inversely with negative affect.

Modesty, however, was not correlated with satisfaction with life, affect (Martínez-Martí and Ruch, 2014), or well-being (Hausler *et al*., 2017).

Resilience

Resilience includes "positive affect and optimism, cognitive flexibility, active coping (including religious coping), social support and intimacy, ability to regulate negative emotions, and mastery". Resilience training programmes include the fostering of empathy, spirituality, faith, problem solving, self-efficacy, and meaning (Tuck and Anderson, 2014).

Resilience was found to correlate with positive emotions, emotional stability (Huppert and So, 2013) and positive affect (Steinhardt *et al*., 2015), but not with satisfaction with life (McGee *et al*., 2017). Resilience correlated negatively with depressive symptoms (Scorza *et al*., 2017, Steinhardt *et al*., 2015, McGee *et al*., 2017), perceived stress (Olson and Kemper, 2014) post-traumatic stress (Vieselmeyer *et al*., 2017; McCanlies *et al*., 2017), anxiety (McGee *et al*., 2017), loneliness (Kuwert

et al., 2014) and was lower in those with eating disorders (Brown *et al*., 2009). Resilience was inversely associated with burnout, screening positive for alcohol and substance abuse (Vetter *et al*., 2018). A study of veterans also found that developing resilience through early combat exposure also correlated with reduced carer strain (Monin *et al*., 2014).

Optimism correlated with positive affect (Froh *et al*., 2009; McGee *et al*., 2017; Burke *et al*., 2009), hedonia (Jones *et al*., 2013), and inversely with negative affect (Froh *et al*., 2009; McGee *et al*., 2017), loneliness (Kuwert *et al*., 2014), perceived stress and burnout (Gustafsson and Skoog, 2012). Optimism was negatively associated with depressive and anxious symptoms (Millstein *et al*., 2016) and was lower in those with eating disorders (Brown *et al*., 2009).

Optimism was predictive of well-being (Hyland *et al*., 2007), and correlated with contentment and life satisfaction (Froh *et al*., 2009, Burke *et al*., 2009), although in another study it failed to correlate with life satisfaction (McGee *et al*., 2017). Optimism was found to be a positive predictor of positive mental health and social and psychological well-being (Lim, 2015). In one study, an optimism intervention was found to increase satisfaction with life (Boehm *et al*., 2011).

Courage

Courage includes character strengths such as persistence, authenticity, bravery and zest (Guse and Hudson, 2014). It can be enhanced through the acknowledgement of previous difficulties that were overcome, inspiration and emotional support (Wein, 2007).

Courage was found to correlate positively with satisfaction with life (Hanks *et al*., 2014; Kim *et al*., 2016b), resilience and psychological well-being (Kim *et al*., 2016b), and negatively with smartphone and internet addiction (Choi *et al*., 2015).

Persistence correlated with well-being in one study (Littman-Ovadia and Lavy, 2012), but only correlated with specifically psychological well-being in another (Hausler *et al*., 2017). Perseverance was also found to correlate with satisfaction with life (Hanks *et al*., 2014; Martínez-Martí and Ruch, 2014), subjective well-being, subjective happiness (Goodman *et al*., 2017) and positive affect, and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014) and depressive symptoms (Goodman *et al*., 2017).

Bravery correlated with satisfaction with life, positive affect and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014). It correlated with well-being in one study (Littman-Ovadia and Lavy, 2012) but not in another (Hausler *et al*., 2017).

Commitment to action correlated with satisfaction with life, resilience and psychological well-being (Kim *et al*., 2016b), and contributes to psychosocial adaptation (Kim *et al*., 2016a). Patients

undergoing psychotherapy for depression who were high in autonomous motivation improved faster than those low in autonomous motivation (Zuroff *et al*., 2017).

Honesty, a character trait which requires courage, correlated with and was predictive of satisfaction with life (Martínez-Martí and Ruch, 2014; Palacios *et al*., 2015), correlated with positive affect and well-being (Littman-Ovadia and Lavy, 2012) and was inversely correlated with negative affect (Martínez-Martí and Ruch, 2014). It also predicted improvements in psychological functioning in the context of therapy (Thalmayer, 2018). Openness correlated with subjective, psychological and composite well-being (Cox *et al*., 2010); however it was also associated with narcissism and psychopathy (O'Boyle *et al*., 2014). Authenticity correlated with psychological well-being, but not with subjective well-being (Hausler *et al*., 2017).

Wisdom

Wisdom includes the character strengths of love of learning, creativity, open mindedness, curiosity and perspective (Guse and Hudson, 2014). Most definitions also included the concept that life is worth living for something greater than oneself (Skerrett, 2016).

Wisdom and perspective correlated with satisfaction with life (Hanks *et al*., 2014). Wisdom was a positive predictor of positive mental health and psychological well-being (Lim, 2015), and correlated negatively with smartphone and internet addiction (Choi *et al*., 2015). Practical wisdom correlated with resilience and psychological well-being, but not with satisfaction with life (Kim *et al*., 2016b). It contributed to psychosocial adaptation to chronic illness and disability by the recognition and acceptance of human frailty, the recognition and management of uncertainty and allowing for a positive interaction between affect and cognition (Kim *et al*., 2016a).

Creativity correlated with positive affect (Martínez-Martí and Ruch, 2014; Conner *et al*., 2015) and satisfaction with life. It had an inverse relationship with negative affect in one study (Martínez-Martí and Ruch, 2014) and was not significantly correlated in another (Conner *et al*., 2015). Love of learning was correlated with satisfaction with life, positive affect and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014), but it did not correlate with subjective well-being and gave inconsistent results for psychological well-being (Hausler *et al*., 2017).

Curiosity correlated with satisfaction with life (Martínez-Martí and Ruch, 2014), positive affect (Martínez-Martí and Ruch, 2014; Conner *et al*., 2015), psychological well-being (Hausler *et al*., 2017), subjective well-being (Goodman *et al*., 2017; Hausler *et al*., 2017) and subjective happiness (Goodman *et al*., 2017). It was found to be a positive predictor of positive mental health, emotional and psychological well-being (Lim, 2015) and was the most effective strength at boosting the effects of goal attainment on well-being (Sheldon *et al*., 2015). One study found that curiosity correlated with well-being in a group of youth leaders, though not in a group of male police investigators (Littman-

Ovadia and Lavy, 2012). Curiosity was found to have an inverse relationship with depressive symptoms (Goodman *et al*., 2017), loneliness (Kuwert *et al*., 2014). In one study curiosity had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014), but not in another (Conner *et al*., 2015).

Open-mindedness correlated with satisfaction with life and positive affect and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014), but not with subjective or psychological well-being (Hausler *et al*., 2017). Perspective correlated with well-being (Littman-Ovadia and Lavy, 2012), satisfaction with life and positive affect, but not with negative affect (Martínez-Martí and Ruch, 2014).

Humanity

Humanity includes character strengths such as love, kindness and social intelligence (Guse and Hudson, 2014). Humanity correlated with satisfaction with life (Hanks *et al*., 2014) and was associated with psychological well-being and reductions in positive symptoms in patients with a first episode of psychosis (Browne *et al*., 2018). It negatively correlated with internet but not smartphone addiction (Choi *et al*., 2015).

One study found that patients with depression and anxiety had lower mean scores on interpersonal strength, although this did not remain significant in a regression analysis (Ho *et al*., 2016). Another study found that interpersonal strength correlated positively with flourishing and negatively correlated with perceived stress, depressive symptoms, and with anxiety (at one out of two time points measured) (Duan, 2016).

Social connectedness was associated with lower onset of suicidal ideations and a greater chance of these remitting (Smith *et al*., 2016). Social intelligence and love correlated with well-being in a group of youth leaders, but not in a group of police investigators' group (Littman-Ovadia and Lavy, 2012). Both were correlated with satisfaction with life, positive affect and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014). Social intelligence correlated with psychological but not subjective well-being (Hausler *et al*., 2017).

Love correlated and was associated with subjective and psychological well-being (Hausler *et al*., 2017), and correlated with satisfaction with life and positive affect, and had an inverse relationship with negative affect (Martínez-Martí and Ruch, 2014). The Capacity to Love inventory scores were inversely correlated with pathological narcissism and with depression scores (Kapusta *et al*., 2018).

Performing acts of kindness improved hopelessness and optimism in patients admitted for suicide attempts (Huffman *et al*., 2014). A kindness intervention showed a positive effect on positive emotions but not have a positive impact on either negative emotions or academic engagement (Ouweneel *et al*., 2014). Acts to help others were reported by men as a common strategy for

reframing thoughts and feelings to help with or prevent depression (Proudfoot *et al*., 2015). Kindness correlated with satisfaction with life and positive affect, but not with negative affect (Martínez-Martí and Ruch, 2014).

Justice

Justice is a virtue that includes teamwork, fairness and leadership (Guse and Hudson, 2014). It correlated with satisfaction with life (Hanks *et al*., 2014) and was negatively correlated with smartphone and internet addiction (Choi *et al*., 2015). Teamwork had an inverse relationship with negative affect and correlated with satisfaction with life, positive affect (Martínez-Martí and Ruch, 2014) and psychological well-being, but gave inconsistent results for subjective well-being (Hausler *et al*., 2017).

Fairness, however, did not correlate with satisfaction with life or negative affect. It correlated with positive affect (Martínez-Martí and Ruch, 2014) and psychological well-being, but had inconsistent results for subjective well-being (Hausler *et al*., 2017).

Transcendence

Transcendence includes humour, appreciation of beauty and excellence, gratitude, spirituality and hope (Guse and Hudson, 2014). It was associated with improved clinical presentation in a first episode of psychosis (Browne *et al*., 2018). Transcendence was negatively correlated with distress (Shoshani and Slone, 2016) and with smartphone and internet addiction (Choi *et al*., 2015). It correlated with satisfaction with life, resilience and psychological well-being (Kim, *et al*. 2016b).

Spirituality correlated with positive emotion (Kern *et al*., 2015). Depressive symptoms correlated negatively with spirituality (Barton and Miller, 2015; Underwood and Teresi, 2002; Sacco *et al*., 2014) or spiritual meaning (Ai *et al*., 2005). Religion, spirituality and spiritual meaning correlated negatively with anxiety (Underwood and Teresi, 2002, Sacco *et al*., 2014, Ai *et al*., 2005). Religiosity and spirituality also correlated with lower levels of lifetime suicidal ideations (Krysinska *et al*., 2015). Spirituality and religious salience correlated positively or were a predictor of well-being (Hausler *et al*., 2017; Paine *et al*., 2018; Lim, 2015). Spirituality had a negative correlation with stress (Underwood and Teresi, 2002) and had a positive effect on subjective happiness (Mahipalan and S, 2019) and life satisfaction (Doolittle *et al*., 2015; Williams *et al*., 2010). Spirituality negatively correlated with anger coping and hostility and correlated with quality of life, optimism and perceived social support, but not with lower sleep difficulty scores (Underwood and Teresi, 2002).

Patients with schizophrenia who described their spirituality as essential had lower negative symptoms and higher self-esteem, social functioning and psychosocial quality of life (Huguelet *et al*., 2016). A spirituality teaching programme was found to have benefits in emotional regulation, cognitive reframing, mood and self-esteem (Moritz *et al*., 2011).

In an American sample, black people had better mental health with higher rates of flourishing compared with white people, and it was believed that religious attendance accounted in part for this, though it should be noted that black people were also found to have higher languishing levels in the absence of mental health conditions (Keyes, 2009). Religious involvement was linked with happiness in another study (Gillham and Seligman, 1999), while the frequency of attending religious activities, engagement in private spiritual practices and intrinsic religiosity were negatively correlated with loneliness in another study (Kuwert *et al*., 2014).

However, at least one study showed no associations between religiosity and better mental health (Mahmoodabad *et al*., 2016). In some studies, spirituality or religiousness was not correlated with satisfaction with life (Martínez-Martí and Ruch, 2014; Wirth and Büssing, 2016; Hanks *et al*., 2014), affect (Martínez-Martí and Ruch, 2014), anxiety, depressive symptoms (Kern *et al*., 2015), eating disorders (Brown *et al*., 2009), wellbeing or perceived sleep change (Hyland *et al*., 2007).

Appreciation of beauty correlated with positive affect but not with satisfaction with life or negative affect (Martínez-Martí and Ruch, 2014). Appreciation of beauty and excellence did not correlate with subjective well-being and gave inconsistent results for psychological well-being (Hausler *et al*., 2017).

Interventions to consider the best possible selves improved hopelessness in patients admitted to hospital for suicide attempts (Huffman *et al*., 2014), and improved satisfaction with life and optimism in a general sample (Peters *et al*., 2013). In a sample of children, there was no effect on affect, and inconsistent results on life satisfaction; however, an increase in self-esteem was recorded (Owens and Patterson, 2013).

Awe was hypothesised to be a healing affect (Russell and Fosha, 2008), although another study has noted that the type of awe – whether it was based on threat or wonder – could have different effects on mental illness and well-being (Gordon *et al*., 2017). Handling museum objects by a sample of patients demonstrated increases in positive affect, wellness and happiness as well as decreases in negative affect (Thomson and Chatterjee, 2016).

In an Asian American sample, humility was positively correlated with emotional self-control (Wong *et al*., 2012). Deficits in well-being did not correlate with humility in a sample of patients undergoing therapy (Paine *et al*., 2018), but humility was negatively correlated with depressed affect in a different study (Krause, 2014). In a sample of university students, humility was significantly lower in those with an eating disorder (Brown *et al*., 2009).

Gratitude

Gratitude has cognitive, emotional and behavioural dimensions, which have positive transformational effects (Emmons and Stern, 2013) and positive effects on mental health (Lim, 2015). Grateful

individuals tend to have higher levels of positive emotions such as joy, enthusiasm and happiness, and lower levels of negative emotions such as envy, greed, bitterness and resentment (Emmons and Stern, 2013).

Gratitude was negatively associated or correlated with depressive symptoms (Mills *et al*., 2015; Kern *et al*., 2015; Li *et al*., 2016; Goodman *et al*., 2017; Millstein *et al*., 2016; Althaus *et al*., 2018; Langer *et al*., 2016; McGee *et al*., 2017; Toussaint *et al*., 2017; Greene and McGovern, 2017; Eaton *et al*., 2014; Van Dusen *et al*., 2015; Lin, 2015; Sacco *et al*., 2014; Lambert *et al*., 2012; Chen *et al*., 2012; Aghababaei and Tabik, 2013). Gratitude correlated with positive emotion or affect (Kern *et al*., 2015, Langer *et al*., 2016, Eaton *et al*., 2014, Chen *et al*., 2012) and hedonia (Jones *et al*., 2013).

Gratitude negatively associated or correlated with anxiety (Kern *et al*., 2015; Millstein *et al*., 2016; Althaus *et al*., 2018; Langer *et al*., 2016; McGee *et al*., 2017, Toussaint *et al*., 2017; Aghababaei and Tabik, 2013), perceived stress (Coleman *et al*., 2016) and post-traumatic stress symptoms (McCanlies *et al*., 2017; Van Dusen *et al*., 2015). It also reduced the effects of early traumatic stress on mental health (Reinert *et al*., 2016). Gratitude negatively correlated with post-traumatic stress, and strengthened the relationship between post-traumatic stress and post-traumatic growth (Vieselmeyer *et al*., 2017), positively correlating with the latter (Greene and McGovern, 2017; Zhou and Wu, 2015).

Gratitude positively correlated and associated with, and predicted well-being (Lim, 2015; Goodman, *et al*., 2017; Hausler *et al*., 2017; Greene and McGovern, 2017; Littman-Ovadia and Lavy, 2012; Chen, 2013; Chen and Kee, 2008). It was positively associated with higher quality of life (Althaus *et al*., 2018; Toussaint *et al*., 2017; Eaton *et al*., 2014) and satisfaction with life (McGee *et al*., 2017; Miley and Spinella, 2006; Burke *et al*., 2009; Aghababaei and Tabik, 2013). Gratitude positively correlated with happiness (Goodman *et al*., 2017; Langer *et al*., 2016; Jun *et al*., 2016), and was associated with better sleep (Mills *et al*., 2016; Wood *et al*., 2009). It negatively correlated with gambling (Loo *et al*., 2014), and suicidality (Krysinska *et al*., 2015; Lin, 2015).

According to one meta-analysis, gratitude interventions performed better than control conditions but not better than psychological interventions with regards to well-being (Davis *et al*., 2016). Gratitude interventions were found to have positive effects on quality of life (Jung and Han, 2017), anxiety states (Ramírez *et al*., 2014), perceived stress (Cheng *et al*., 2015) depression scores (Ramírez *et al*., 2014; Cheng *et al*., 2015, Lambert *et al*., 2012), life satisfaction (Ramírez *et al*., 2014; Boehm *et al*., 2011; Froh *et al*., 2009), subjective happiness (Ramírez *et al*., 2014), positive affect (Lambert *et al*., 2012; Martínez-Martí and Ruch, 2014; Froh *et al*., 2009), happiness (Proyer *et al*., 2014), body area satisfaction (Geraghty *et al*., 2010) and general mental health (Wong *et al*., 2018). Gratitude was a predictor of well-being (Kashdan *et al*., 2009).

In a group of patients admitted to hospital for suicidal thoughts or behaviours, a gratitude letter and counting blessings interventions improved hopelessness and optimism scores (Huffman *et al*.,

2014). Grateful contemplation also mitigated the effects of viewing images of thin models on body dissatisfaction (Homan *et al*., 2014). Gratitude journalling, writing and delivering gratitude letters had significant benefits in terms of depression, sleep and happiness (Emmons and Stern, 2013). Gratitude lists and diaries were felt to be as effective as other mainstream therapies (Wood and Tarrier, 2010). Gratitude visits generated the largest effect sizes in terms of happiness increases and depression reductions. Gratitude contemplation may have rapid short-term effects to raise mood (Wood and Tarrier, 2010). In another study, however, a gratitude intervention increased positive affective well-being, but did not reduce negative affective well-being (Kaplan *et al*., 2014).

However, gratefulness did not always predict mental health outcomes (Osborne *et al*., 2012) and gratitude showed no difference in terms of positive and negative emotions in one study (Ouweneel *et al*., 2014), and showed no correlation with negative affect in another (Froh *et al*., 2009), but showed a positive correlation with negative affect in yet another study (Froh *et al*., 2008). Some gratitude interventions did not demonstrate significant benefits in quality of life (Sacco *et al*., 2014), satisfaction with life and optimism (Peters *et al*., 2013), well-being (Timmons and Ekas, 2018; Winslow *et al*., 2017), affect, self-esteem (Owens and Patterson, 2013) and depressive symptoms (Lau and Cheng, 2017).

III. Discussion and Implications for Clinical Practice

Promising as these results may seem, they invariably raise certain challenges that need to be addressed at both a conceptual and a clinical level.

Conceptual issues

From a philosophical point-of-view, these findings suggest the need for a radical rethink of the meaning of mental health in relation to the disease-model prevalent in clinical psychiatry at present. Positive psychology, after all, proposes not simply a new method but also as a new conception of what mental health is: its subject is well-being and what makes a "meaningful, happy life" (Mahipalan and S, 2018; Huppert and So, 2013). This new field of study would appear to find an ally in the older Aristotelian tradition that sees virtue as constituting the path towards happiness or *eudaimonia*. The concept of mental health, on this view, goes beyond symptom and disorder and relates to a more holistic picture of human life and flourishing. The empirical evidence summarised above seems to provide a starting point with which to investigate the role that virtue can therefore play in positive mental health.

Furthermore, the findings do not simply show correlations between virtue or virtue-based interventions and indicators of positive mental health, but also with better outcomes in patients with psychosis, as well as in those with suicidal ideations and behaviours. One need not be committed to a view that rejects a biological basis of mental illness to acknowledge that mental illness, as with mental

health, has something to do with virtue. Virtue may prove to be an adequate complement to the much-used biopsychosocial model in medicine.

Nevertheless, if all this is so, certain conceptual challenges must be addressed:

1. There is no agreed definition of flourishing in the papers we reviewed – for example, whether flourishing should be thought of as a single continuum with mental illness, or as a separate continuum altogether, is therefore not a settled question. Furthermore, one might also ask whether there is cultural relativity between definitions of flourishing and the virtues and character traits thought to constitute it. One study we reviewed (Boehm *et al*., 2001), for instance, showed that optimism or gratitude had a larger effect on life satisfaction for Anglo Americans than predominantly foreign-born Asian Americans, and this may be due to cultural differences in relation to the importance of self-improvement and personal agency.
2. A second challenge relates to the question of circularity. Hanks *et al*. (2014) write that "[c]orrelational and [mediational] analyses cannot imply a causal relationship, and bidirectionality should be entertained as a hypothesis". A correlation between gratitude and mental health, however significant, does not establish whether gratitude is a protective factor, a direct cause of mental health, or part of an interrelated conceptual "package" called "flourishing" that includes mental health. It might even be the case that good mental health facilitates gratitude rather than the other way round.
3. Finally, there is a question of how emotions and behaviours are characters as "positive" or "negative" in positive psychology. Wood and Tarrier (2010) argue that "[e]motions and characteristics can neither be seen to be 'positive' or 'negative' as their harmful or beneficial impact is context specific and motivation dependant". An apparently positive characteristic can become maladaptive past a certain point, "thus righteous anger can become anger management problems, happiness becomes mania", while on the flipside, supposedly "negative acts" like complaining can also be productive, for example, by being cathartic. The positive psychological literature rarely explores the possibility of virtues being taken to a detrimental excess (Grant and Schwartz, 2011), which contrasts with a more authentically Aristotelian perspective that sees virtue as being a mean between excess and defect. Without any attention paid to cause and context, it would be difficult to determine whether a particular emotion or behaviour is appropriate (Harcourt, 2013), and therefore truly "positive". This has implications both for studying and for developing virtue in clinical settings.

Clinical issues

In relation to the potential clinical efficacy of virtue, the findings we reviewed suggest a significant correlation between the virtues and many measures of well-being and symptoms of mental illness. But it is important to note first of all many of the studies we reviewed primarily used non-clinical samples

(e.g. psychology or medical students or other non-clinical populations) who may not have met the threshold for major depressive disorder or an anxiety disorder, for instance, even if depressive and anxious symptoms were among the outcomes measured. Furthermore, few studies of positive psychology interventions made comparisons with other gold standard interventions – wait list control groups were the most common comparator, instead. Hence, despite the wealth of data reviewed, it is not possible at this stage to make an assessment about the relative clinical efficacy of virtue-based interventions.

In view of both the promise suggested by the current state of empirical evidence as well as its limitations, we recommend the following directions for future research and practice:

1. Clinicians should see the virtues as complementing, not replacing, the traditional pathology-based framework of mental health care. Virtue, the use of character strengths and flourishing are important dimensions of complete mental health. Formulations and care plans would be enhanced by the addition of these dimensions.
2. Virtue-based interventions have primarily been tested in general and non-clinical samples and therefore it remains unknown, for the most part, what the effect of these interventions are on patients suffering from diagnosable mental illnesses. Future research is needed to fill this gap, and such studies should also consider the impact of traditional psychotherapies and psychotropics on mental health in relation to, or in conjunction with, virtue-based interventions. Furthermore, the use of third-party measurements and proxy measures of virtue via technology (such as virtual reality situations) can help to decrease the reliance on self-reports of virtue.
3. There is evidence that positive psychology interventions (such as gratitude interventions), can produce short-term benefits on mood, anxiety, well-being and life satisfaction. These may be beneficial to the general public. Longitudinal studies are needed to determine what these interventions' long-term impact on general mental health and illness is, and whether they are feasible as a form of primary prevention to reduce the incidence of mental illness. Research in this direction will also need to address questions of cost-effectiveness and the potential of funding them instead or alongside traditional psychotherapy services.

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