



Synthesizing positive psychological interventions: Suggestions for conducting and interpreting meta-analyses

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Abstract: Systematic reviews, such as meta-analyses, are highly valued within scientific, professional, and lay communities because they provide an easily digestible aggregate of a large body of work. A recently published meta-analysis of positive psychology interventions concluded that these interventions have small effects and argued for the use of these interventions in diverse populations (Bolier et al., 2013). We caution researchers against drawing conclusions from this study because of the unusual definition of what is (and is not) a positive psychological intervention. Bolier and colleagues (2013) define their area of inquiry as “pure positive psychology interventions” and limit their sample to studies conducted within the years following the formal founding of the positive psychology movement. This decision – while well intentioned, as it provides specificity to their criteria for inclusion – is, in our view, too narrow, excluding a host of studies that use the same intervention strategies and target the same outcomes but do not explicitly reference “positive psychology”. The inclusion criteria of a systematic review directly impact its findings and conclusions. Using the criterion of papers that explicitly reference positive psychology creates an arbitrary boundary that reflects neither the research nor practice of the field; the best practitioners prioritize effectiveness and efficiency over explicit ties to “positive psychology”. Arbitrary boundaries hinder science and impair the ability of researchers, clinicians, and the general public to draw accurate conclusions from the findings. It also limits the meta-analyst’s ability to conduct moderation analysis that can help drive the field forward by answering research questions that are difficult to address in a single study. Positive psychology and psychology more generally would benefit from definitions of terms that are conceptually-based and thus meta-analyses that are theoretically sound.

Keywords: meta-analysis, positive psychology, moderator analysis, interventions, definition

1. Background

The proliferation of interventions aimed at increasing positive emotions, behaviors, and thoughts has led to increasingly nuanced questions about the efficacy of such interventions (Lyubomirsky & Layous, 2013), the application of such interventions to new, unique populations (Froh, Kashdan, Ozimkowski, & Miller, 2009; Meyer, Johnson, Parks, Iwanski, & Penn, 2012), new settings (Huppert & Johnson, 2010; Reivich, Seligman, & McBride, 2011; Seligman, Rashid, & Parks, 2006), and new modes of delivery (Parks & Szanto, 2013; Schueller & Parks, 2012). Although these interventions first surfaced in the research literature 35 years ago (Fordyce, 1977), their presence has multiplied over the last decade thanks to an increasing interest by researchers within the positive psychology community in their design and application and a growing



appreciation of the importance of positive behaviors, cognitions, and emotions in mental health care. Given the number of studies, researchers and practitioners require updated, accurate summaries of the field. A recently published meta-analysis concluded that positive psychology interventions are effective in increasing subjective wellbeing, psychological wellbeing, and in reducing depressive symptoms with small effect sizes, on average (Bolier et al., 2013). These findings are consistent with a previous meta-analysis (Sin & Lyubomirsky, 2009) and with other qualitative reviews of the field (Lyubomirsky & Layous, 2013; Schueller & Parks, 2014). However, the usefulness of the meta-analysis by Bolier and colleagues (2013) is hampered by its narrow conception of which interventions to include. We argue for the consideration of *positive psychological* interventions rather than *positive psychology* interventions to emphasize the importance of including interventions that are conceptually aligned with the goals of the positive psychology movement rather than only those that explicitly identify positive psychology within their published studies (Parks & Biswas-Diener, 2013). We want to promote a discussion of what positive psychological interventions, defined more inclusively, would entail and to encourage those interested to read Bolier and colleagues (2013), available as an open-access journal article, and to consider our commentary in light of their work.

2. What is a Positive Psychological Intervention?

A positive psychological intervention promotes positive emotions, behaviors, and/or thoughts, thereby increasing the wellbeing of an individual or group (Parks & Biswas-Diener, 2013). This definition underscores two essential components of positive psychological intervention: (1) the intervention's *goal* and (2) the *pathways* via which the intervention operates.

In order to be considered a positive psychological intervention, an intervention's *goal* must target wellbeing, broadly defined. In intervention studies, wellbeing is commonly defined and measured from a subjective wellbeing approach. In this perspective, wellbeing is a sum of positive evaluations of one's life (cognitive) and frequent experiences of positive emotions and infrequent experiences of negative emotions (affective) (Diener, 2000). Raising one's wellbeing thus increases positive facets and decreases negative facets. Intervention studies use diverse outcomes to cover these facets including increases in happiness, satisfaction with life, and positive emotions and decreases in depressive symptoms and negative emotions. Both existing meta-analyses on interventions within positive psychology summarize these outcomes (Bolier et al., 2013; Sin & Lyubomirsky, 2009). Other facets of wellbeing, however, are equally important and even measures commonly associated uniquely with either hedonic or eudaimonic approaches to wellbeing, often proposed as distinct concepts, often work and move in tandem (Kashdan, Biswas-Diener, & King, 2008).

Meeting the *goal* criterion alone, however, does not suffice to differentiate positive psychological interventions from many other interventions (e.g., cognitive-behavioral therapies), and so the *pathway* by which the intervention operates must also be evaluated. Positive psychological interventions must operate via mechanisms that are known to promote positive emotions, behaviors, and/or thoughts rather than fixing deficits or addressing maladaptive patterns. To incorporate this *pathway* aspect, Bolier and colleagues' (2013) specify that interventions must "have been explicitly developed with the theoretical tradition of positive psychology (usually reported in the introduction section of the article)" (pg. 3). Bolier and colleagues (2013) further operationalize this in their search criteria by including only interventions "covering the period from 1998 (the start of the positive psychology movement) to November 2012" (one article, Lichter, Haye, and Kammann (1980), included in the analysis was published prior to this date). Although Bolier and colleagues (2013) drew on Sin and

Lyubomirsky's (2009) criteria, this criterion is more selective than Sin and Lyubomirsky's (2009), which only required that a study test "an intervention, therapy, or activity primarily aimed at increasing positive feelings, positive behaviors, or positive cognitions" (pg. 469). Indeed, of the 51 studies included in Sin and Lyubomirsky (2009) and 39 included by Bolier and colleagues, 16 overlapped.

As an alternative to the approach used by Bolier and colleagues (2013), we posit that this *pathways* component be based on accumulated knowledge of the affective, behavioral, cognitive, and motivational processes that support wellbeing. Indeed, sufficient evidence exists to detail some of these differences (Lyubomirsky, 2001), highlighting strategies such as gratitude, kindness, optimism, savoring, and mindfulness to name a few. Other alternatives could include a thorough conceptual mapping of the field of positive psychology (e.g., Rusk & Waters, 2013). Conceptual and empirical considerations would provide a better representation of the practices of the field than an explicit reference to "positive psychology", which might merely represent biases, preferences, or interests of the publishing author or journal.

3. Impact on the Field

We believe that the definition employed by Bolier et al. (2013), restricted to "positive psychology" interventions, is conceptually limited and left uncorrected will stand to weaken subsequent research. The first problem is that how a meta-analysis defines a construct sets a precedent for how that construct should be defined in future studies. It is important, then, to address any problems with Bolier and colleagues' (2013) definition before it becomes widely used. Their narrow definition has the potential to significantly silo the field by including only work conducted by those who explicitly acknowledge positive psychology. Positive psychology would benefit from being more inclusive and integrated with research that shares clear conceptual overlap.

As an example, consider the research on values affirmations (Cohen & Sherman, 2014). In laboratory intervention studies, researchers ask people to reflect on the self-defined, abstract, life principles that serve to guide personal goals and the dedication of effort to what is most meaningful and important to them (Cook, Purdie-Vaughns, Garcia, & Cohen, 2012; Creswell et al., 2005). After this act, participants enter a threatening environment. Across multiple studies, researchers have found that value affirmations lessen psychological and physiological indices of stress and improve performance compared to control conditions (Martens, Johns, Greenberg, & Schimel, 2006; Schmeichel & Vohs, 2009). In none of these studies is "positive psychology" mentioned and there are no citations to papers seminal to the positive psychology movement. Bolier and colleagues' (2013) inclusion criteria also do not allow for including any work in relevant areas that preceded the founding of the field. Positive psychology did not create the exploration of increasing wellbeing and a substantial base of empirical work existed prior to its inception (e.g., Fordyce, 1977).

As another example, a rapidly expanding body of literature is accumulating on the "Best Possible Self" intervention (Austenfeld, Paolo, & Stanton, 2006; Austenfeld & Stanton, 2008; Boehm, Lyubomirsky, & Sheldon, 2011; Hanssen, Peters, Vlaeyen, Meevissen, & Vancleef, 2013; King, 2001; King & Miner, 2000; Layous, Nelson, & Lyubomirsky, 2013; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Meevissen, Peters, & Alberts, 2011; Oyserman, Bybee, & Terry, 2006; Peters, Flink, Boersma, & Linton, 2010; Peters, Meevissen, & Hanssen, 2013; Sheldon & Lyubomirsky, 2006), a positive psychological intervention that promotes optimistic thinking by having individuals imagine a future where everything has gone as well as it possibly could. Promoting optimism is clearly in line with the goals of positive psychological practices and

theoretical and empirical support exists for its inclusion using the pathways criterion we proposed earlier. Indeed, Bolier and colleagues (2013) included several studies of this intervention in their meta-analysis (Boehm et al., 2011; King, 2001; Layous et al., 2013; Lyubomirsky et al., 2011; Peters et al., 2010; Sheldon & Lyubomirsky, 2006) but omitted others (e.g., Austenfeld et al., 2006; Austenfeld & Stanton, 2008; Hanssen et al., 2013; King & Miner, 2000; Meevissen et al. 2011; Oyserman et al., 2006; Peters et al., 2013). As such, one cannot make conclusions whether the “Best Possible Self” is efficacious or understand how this intervention might compare to positive psychological interventions using different pathways (e.g., kindness, gratitude, etc.). Bolier and colleagues’ (2013) proposed solution is to conduct meta-analyses that are restricted to specific types of interventions; however, approaching the field in this way limits the ability to make comparisons within a meta-analysis and ignoring specific research areas might bias a meta-analysis of positive psychological interventions (e.g., Bolier et al., 2013).

The importance of comparisons within a meta-analysis relates to another consequence of using a narrow definition of positive psychology interventions. Such an approach limits confidence in the conclusions, especially with regards to moderating factors. Bolier and colleagues’ (2013) conclusion was that interventions produced small effects on subjective wellbeing ($d = .34$), which was considerably smaller than the medium-sized effect ($r = .29$, which corresponds to $d = .61$) found by Sin and Lyubomirsky (2009). This difference was even more pronounced for depressive symptoms ($d = .23$ for Bolier et al., 2013; $r = .31$ for Sin & Lyubomirsky, 2009, which corresponds to $d = .65$). Bolier and colleagues (2013) also concluded that longer, individual interventions delivered to people experiencing psychosocial problems and recruited via the healthcare system were the most effective interventions (Bolier et al., 2013). It is unclear if these results would hold if other interventions were included (e.g., mindfulness, reminiscence, forgiveness, value affirmation). An open question here is whether interventions labeled explicitly as positive psychology interventions have any bias in their design, reporting, or likelihood of publication that would subsequently bias findings using only these studies as a basis for analysis. This could be explored in a subsequent review if its answer is deemed valuable to the field.

4. Advancing Positive Psychological Interventions

Meta-analyses serve as summaries of the state of the field (i.e., what works, what does not work) and highlight potential avenues for future exploration (e.g., moderator findings suggest design considerations for future studies and possible mechanisms of action). As such, inclusion criteria require conceptual sophistication, as many others will use these criteria to define what does and does not belong within the scope of a field. The meta-analysis by Bolier and colleagues (2013) surveyed a narrow selection of positive psychology interventions. Specifically, their criteria silo the field by examining only those interventions that explicitly reference positive psychology and that occurred after the formal founding of the field.

This approach is inconsistent with how positive psychology operates in both research and in practice. Positive psychology draws heavily from previous movements including humanistic psychology, community psychology, and virtue ethics. Its practices overlap with techniques developed and practiced elsewhere including mindfulness (from Buddhist tradition), goal pursuit (from cognitive therapy), and exploring values (from acceptance and commitment therapy). It draws from traditions of research that long predate the term “positive psychology,” but that are clearly relevant, including humor, positive emotion, forgiveness, savoring and gratitude, among others. Researchers and practitioners in positive psychology do not draw the arbitrary boundaries used by Bolier and colleagues (2013). Enforcing such a boundary, therefore, paints a picture of the state of the field that is inaccurate.

One goal of positive psychology is to provide “a balanced, empirically grounded, and theoretically rich view of human experience” (Gable & Haidt, 2005, pg. 109). In light of this goal, we should strive to be integrative and comprehensive in our methods rather than narrow and specific. As an alternative to the approach used by Bolier and colleagues (2013), we posit that this *pathways* component be based on accumulated knowledge of what impacts wellbeing. Positive psychology is a broad tent and positive psychological interventions encompass a range of techniques. Systematic reviews should address how well all of these practices work on average and seek to gain advice about the best ways to design, explore, and implement these practices.

Conceptualizing what constitutes a positive psychological intervention, however, is just one challenge for the field revealed by these recent meta-analyses. Another related issue, revealed by the existing meta-analysis, as well as our definition, is what are the targets of interventions. Both Bolier and colleagues (2013) and Sin and Lyubomirsky (2009) required that studies include measures of wellbeing or depressive symptoms. Although wellbeing makes conceptual sense from the framework of positive psychology, the use of depressive symptoms is a bizarre attachment of intervention research in the field. After all, a core assumption of positive psychology is that applied psychology (clinical, counseling, etc.) is insufficient for improving the human condition, with its lengthy attachment to moving people from suffering (-5) to a normal range of distress (-1). In addition, there is a need for interventions that move people from average psychological and physical health (0) to a state of flourishing (+3 or higher) (Duckworth, Steen, & Seligman, 2005). Based on this clearly articulated framework of positive psychology, reductions in depressive symptoms (capturing nothing more than a reduction in psychological distress) over the course of a positive psychological intervention offers nothing beyond the primary outcomes being used in clinical psychology and psychiatry. Increasingly, positive psychological interventions are being aimed at clinical populations, such as people with schizophrenia (Meyer et al., 2012), smokers who wish to stop smoking (Kahler et al., 2014), and suicidal inpatients (Huffman et al., 2013), but with the focus being on building the positive aspects in these individuals as opposed to reducing the negative. A broader definition focusing on positive psychological interventions will undoubtedly capture a broader range of targets and outcomes and future analyses should ensure that outcome measures are aligned with the conceptual framework of the interventions.

Conflict of Interest Statement

The authors declare that they have no competing interests.

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