

Positive Psychology Interventions and the Effects of Loving Kindness Meditation

Tianhao Wang

University of Melbourne

Wellbeing, Motivation, and Performance (EDUC10057)

26/02/2017

Introduction

Positive Psychology (PP) is a research field that greatly benefits from its applicability. Research findings present actionable answers for practitioners of psychiatry that are empirically validated in the form of Positive Psychology Interventions (PPI; Sin & Lyubomirsky, 2009, p. 468). To begin, a Psychology Intervention (PI) is, defined by Ballou (1995), designed to bring general change to people, usually cognitive and emotional state. PIs have traditionally been used to treat mental disorders such as depression and alcohol dependence.

Consider the case study for the latter example as a demonstration of PI: at the date of publication (2011) in the United Kingdom, counselling services and detoxification services are “clearly separated” treatments for alcohol dependence (“Alcohol Use Dependence”, 2011, p. 230) alongside physiological solutions such as a drug prescription. This is noteworthy as it indicates a split in professional opinion in the field, something that is also present concerning the effectiveness of PPI (Sin et al., 2009, p. 468). PIs can vary greatly depending on the approach and classification: e.g.: behavioural, cognitive, etc. (p. 229), which is of note in this study in terms of effectiveness of interventions over their controls and of each other (p. 230). Ultimately, “multicomponent interventions [demonstrated] clear benefits” (p. 343) as a treatment for alcohol dependence and has since (as of 2016) been implemented into the British NHS (“Alcohol misuse treatment, 2016”) for its evidence-demonstrated usefulness in treating alcohol abuse.

PPIs differ from traditional PIs, particularly in terms of goal and outcome; though PPIs are intended for use to treat mental disorders, they are particularly noteworthy in their

Positive Psychology Interventions and the Effects of Loving Kindness Meditation

ability to enrich and build upon “healthy” individuals (Sin et al., p. 468). In short, PPIs are a form of PI that uses the ideas present in PP to build upon an individual’s wellbeing, by building upon and examining the “positive psychological resources” of that individual (p. 468). They exist to “increase individual happiness” (Seligman, Steen, Park, & Peterson, 2005, p. 413), where “happiness” refers to pleasures (hedonism), engagement, and meaning (p. 413). Of interest in PPIs is the duration of improvements in happiness; in Seligman, et al.’s study (2005), initial cynicism showed that people “adapt to positive changes in the world... [soon returning] to baseline happiness” (p. 414; as cited in Brickman & Campbell, 1971; Kahneman, 1999; Lykken & Tellegen, 1996) as shown by the well-studied “hedonistic treadmill.” It implies that all attempts to improve the happiness of an individual is, in the long run, doomed to failure (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008, p. 1060).

However, Seligman et al. had found evidence that certain interventions improved baseline happiness after a period of six months (Seligman et al., 2005, p. 419). The idea that PIs as a solution in the Epicurean need to purely relieve suffering is paralleled in the goals of PPIs; that they can be used to eventually, using an empirical method, become “lastingly happy” (p. 420).

As part of the EDUC10057 program, I implemented a Loving Kindness Meditation (LKM) on myself for two weeks. The LKM, as described in Fredrickson et al.’s study (2008), is a mind-training intervention intended to build positive emotions (p. 1046) intended to demonstrate its ability to “broaden and build” (p. 1045). This “broaden and build” model, introduced by Fredrickson in 1998, suggests that positive emotions such as joy and love could expand people’s “thought-action repertoires” (Fredrickson, 2001, p. 219) allowing them greater scope in thought, and build upon “personal resources” physical, intellectual, and

otherwise (p. 219). Fredrickson found that positive emotion allows for “individual growth and social connection” (p. 224) ultimately improving the wellbeing of individuals in the future, i.e.: positive emotion has long-lasting consequences though they may be fleeting (p. 224).

Fredrickson et al.’s study (2008) later found that positive emotions (when quantified and surveyed) increased in many different situations during the LKM experiment. This was particularly pronounced in interactions with other people (p. 1060). LKM here was specifically employed to empirically test the “build” component of “broaden and build” to demonstrate how positive emotion, brought forward by the LKM, would influence wellbeing two weeks after directed intervention ended (p. 1057). They discovered that the hedonistic treadmill may be outpaced using LKM as a vessel for positive emotion, changing a person’s life for the better (p. 1060) as the changes in satisfaction demonstrated.

With regards to my two-week intervention, I expected that there would be very small but demonstrated changes (broadening) of thought and emotions leading to an at least slight change in wellbeing with regards specifically to interpersonal development. The changes in positive emotions would be particularly pronounced at the beginning of the intervention, as demonstrated by the idea that “time [would be] a significant predictor of positive emotions” (p. 1052), validating the “broaden” component of the “broaden and build” model. Any changes to wellbeing (particularly presence of positive emotions) based on this change would take time to develop but would develop as my interactions with other people increased, as the intensity of positive emotions increases significantly during social interaction (p. 1054).

Method

The LKM was administered once daily over two weeks from the 30th of January to the

Positive Psychology Interventions and the Effects of Loving Kindness Meditation

12th of February, 2017. Each session of LKM was, on average, about 12 minutes long. Every LKM was administered at 9pm local time except for the 2nd of February which was administered around 12pm. The total accumulated time in meditation over these two weeks was approximately three hours for a total of fourteen occurrences. The intervention took place in a soundproofed room in a house with no source of light in an office chair at a table for thirteen of the occurrences, with one exception taken outdoors (the same exception on the 2nd of February). The LKM was not continued after the intervention period ended.

Each intervention session relied on listening to a speaker, usually in silence, through headphones with eyes closed, feet planted on the ground, with a back straight leaning on a chair. Several different recordings were available from different amateur sources on the internet, with others provided by Greater Good in Action at Berkeley and Positivity Resonance. The recording picked on any day was the next chronologically collected source for the first five days with arbitrarily picked sources thereafter. The Greater Good in Action recording, which was 15 minutes long, was the modal meditation source as it was used four times.

The basic idea of LKM was present in each of the recorded meditation sources: the listener would try to spread their “warm and tender feelings” towards themselves, their closest loved ones, friends, ever outward until they encompassed the world (Fredrickson et al., 2001, p. 1046). Most started with a focus on the breath, and asked the listener to silently repeat phrases encompassing the idea of loving warmth.

After each individual occurrence, I was to write a reflection on the activity of the meditation, score my wellbeing on a scale of 10, and explain why my wellbeing on that day was that score. As part of this case study, I also took a pre-intervention Satisfaction of Life

and Positive and Negative Affect Schedule (PANAS) test every day for one week, with a rating of my day and an explanation. This took place in the same environment and at the same time as the intervention, and was repeated for another week in post-intervention. Scores would be compared and observations analysed for this study.

Results

As PANAS and Satisfaction of Life metrics took place outside of experimental influence, i.e.: without the intervention, I noted only the mean and standard deviations of quantitative measures, as shown in Figure 1. To compare both values, a two-sample one-tailed z-test was administered with the assumption that all four variables fell approximately under the normal distribution, and that pre-PPI and post-PPI values are reasonably independent of each other.

	Satisfaction with Life	Positive Affectivity	Negative Affectivity	Daily Wellbeing
Pre-PPI (mean)	25.29	28.57	13.00	7.857
Pre-PPI (standard deviation)	0.7559	2.225	3.317	0.5564
Post-PPI (mean)	26.00	36.65	12.19	8.340
Post-PPI (standard deviation)	0.000	2.015	2.410	0.4498
p-value	0.0066	<0.001	0.3015	0.0392

Figure 1. Changes in Wellbeing Metrics (n1=7, n2=7, alpha=0.05)

From Figure 1, with the null hypotheses that the pre-PPI means are equal to those of the post-PPI means, we see extremely statistically significant rejections of the null

hypotheses in Satisfaction of Life, Positive Affectivity, and Daily Wellbeing. As the p-value of Negative Affinity is not within our acceptable alpha-value, we cannot reject the null hypothesis here. In short, three metrics: Satisfaction with Life, Positive Affectivity, and Daily Wellbeing significantly increased in a manner that cannot be attributed to randomness, while Negative Affectivity did not.

During the actual intervention, the only numerical measure recorded was wellbeing score. This value was recorded over time, alongside an explanation, daily for two weeks.

Figure 2 shows the change as a scatterplot with a linear regression.

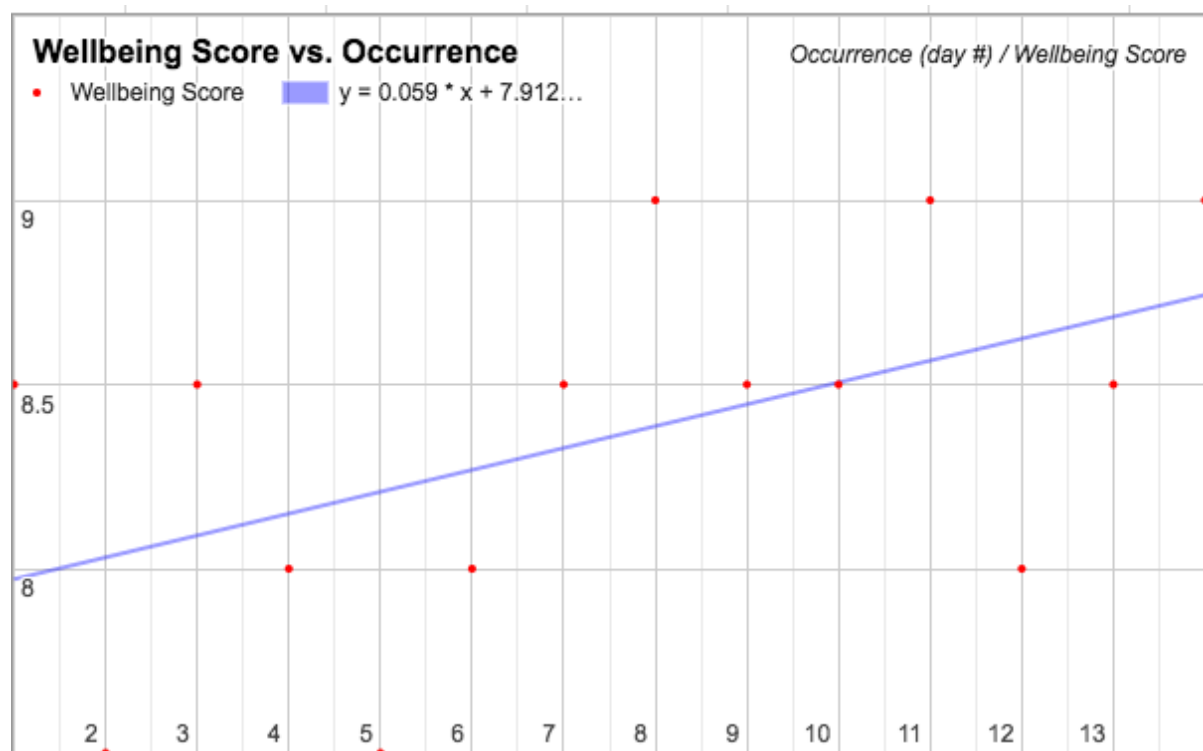


Figure 2. Trend of Wellbeing Score over Time

From Figure 2, we note that the R-squared value of the relationship between wellbeing score and day number is only 5.9%, meaning the days undergoing the intervention only explained 5.9% of the wellbeing score. From this we can conclude that wellbeing score

and time are independent from each other. We can also not reliably use this linear regression to explain any trends in wellbeing.

Discussion

In this case study, there was a clear change in individual wellbeing over the period of four weeks: notably, with regards to my hypothesis that positive emotions (recorded in the PANAS) would show a change over the two-week intervention process exceeding expectations. What I did not expect was that the negative affectivity metric would not change in either extreme, an observation paralleled by Fredrickson's study (2008) where no predictor, including time, were significant (p. 1052) to negative emotions. Further, we can extrapolate the independence of PPIs in the function of reducing negative affectivity; PPIs do not work to reduce negative emotion, but are shown to increase positive emotion.

Secondly, the hypothesis that wellbeing scores would grow significantly in the first few days of the intervention was rejected. Wellbeing scores showed no trend in regards with time, only changing post-PPI. This can most obviously be attributed to sample size of both days and individual(s), as any study performed on a single individual, especially over such a short period, would result in a great deal of confounding variables. This directly contradicted the data found in Fredrickson's study (2008), where it was shown the experimental subjects underwent changes in baseline happiness and showed change over time (p. 1052). It was confirmed that time was a factor in overall happiness in the study of populations, meaning either the results of this study do not apply to me as an individual, or there were experimental design issues. It is far more likely this is the latter, but can be disseminated in future experiments.

The change in Satisfaction of Life may not be a fair indicator given the limited sample

size (number of days). This value is based upon questions that do not, at least for me, change over time. 26 was the mode result both before and after the intervention, suggesting that the $p\text{-value} < 0.01$ was due to the lack of variance, which in turn was due to the lack of days in the sample. We will throw away such data and further claim that we do not have enough evidence to reject the null hypothesis that the PPI did not influence overall Satisfaction of Life scores.

I saw that the wellbeing scores had little directly to do with the intervention and almost exclusively focused on my daily social interaction and the amount of activity in a day, per my reflective journal. A few entries spoke about current events and politics influencing my overall daily wellbeing, but even they did not heavily influence the score on any day. The amount and quality of my social interactions almost exclusively made up for the large increases in wellbeing during the intervention and post-intervention weeks. It should also be noted that the number of social interactions grew over time during and after the intervention as a stark contrast to the pre-PPI. I did not have any quantitative measure of social interaction frequency or quality, which would have been an interesting test metric.

I will posit that my experiences with LKMs still demonstrate the “broaden and build” model: LKMs helped with building immediate positive emotions, but not specifically to instantly improve my quality of life, as expected. However, some change can in turn cause positive feedback, i.e.: behaviour can influence interactions and thoughts within an individual's life (broadening), which in turn leads to greater ability to perform and seek out behaviour that may improve overall wellbeing of an individual (building). The “stuck in a rut” languishing state that people may be in (Sin et al., 2009, p. 468) can directly be affected by the broadening of thought-action repertoires (Fredrickson, 2001, p. 221) to aim for more

positive outcomes and, as evident in my trials, have built upon my “mindful attention... positive relations with others, and good physical health” as observed by Fredrickson et al. in their study (2008, p. 1057).

To conclude these discussions, I would like to point out the obvious inability to remove positive emotions shown in the PPI from my experiences during the EDUC10057 program in general, meaning no accurate conclusion can be reached specifically about the LKM PPI. This is particularly of note given my comments on the matter reflecting similarly; that I believed my upbringing and the circumstances of my life made it difficult to bring forward positive emotions such as love through meditation. As noted in Layous, Lee, Choi, and Lyubomirsky’s study (2013), differences in reactions and feelings towards certain PPIs were pronounced (p. 1294) as opposed to the effects LKM had on individuals in Fredrickson’s study (2008). This calls to action a need of exploring other PPIs and happiness-increasing activities as a motive for future study.

Conclusion

These findings were significant because of the pronounced individual effect that LKMs and PPIs have in general over individual wellbeing. PPIs vary in effectiveness and implementation by individuals and social groups, such as Americans and South Koreans (Layous et al., 2013) and should be tested within such groups and individuals to discern their effect on wellbeing. LKMs specifically demonstrate the “broaden and build” model, first established by Fredrickson (2001), by increasing the positive emotions one feels and spreading that warmth to others, improving potential positive relations with other people (Fredrickson, 2008). I found that the presence of LKM activities throughout the two-week intensive process ultimately improved positive affectivity in the form of PANAS scales,

though could not causatively link this to the LKM. Nonetheless, PPIs as a solution for the flourishing of mental health (Sin et al., 2009) were shown to ultimately be effective answers to the age old philosophical question on lasting happiness and what we can do for ourselves to achieve it.

References

- Alcohol misuse treatment. (2016, December 20). Retrieved February 24, 2017, from NHS, <http://www.nhs.uk/Conditions/Alcohol-misuse/Pages/Treatment.aspx>
- Alcohol Use Dependence: Diagnosis, assessment and management of harmful drinking and alcohol dependence (2011). *Advances in Dual Diagnosis*, 4(1), 229–344.
- Ballou, M. B. (1995). *Psychological interventions: A guide to strategies*. United States: Praeger Publishers.
- Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appley (Ed.), *Adaptation-level theory* (pp. 287–305). New York: Academic Press.
- Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology: The Broaden-and-Build Theory of Positive Emotions. *The American Psychologist*, 56(3), 218–226.
- Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., Finkel, S. M. (2008). Open Hearts Build Lives: Positive Emotions, Induced Through Loving-Kindness Meditation, Build Consequential Personal Resources. *Journal of Personality and Social Psychology*, 95(5), 1045-1062.
- Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 3–25). New York: Russell Sage Foundation.
- Layous, K., Lee, H., Choi, I., & Lyubomirsky, S. (2013). Culture matters when designing a successful happiness-increasing activity: A comparison of the United States and South Korea. *Journal of Cross-Cultural Psychology*, 44(8), 1294–1303.

Positive Psychology Interventions and the Effects of Loving Kindness Meditation

Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, 7, 186–189

Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist*, 60(5), 410-421.

Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A Practice-Friendly Meta-Analysis. *Journal of Clinical Psychology*, 65(5), 467-487.