

'The Three Good Things' – The effects of gratitude practice on wellbeing: A randomised controlled trial

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Background: *There are mixed findings concerning the effectiveness of gratitude interventions. This study investigated a commonly used gratitude-based intervention ('count-your-blessings') in promoting physical and psychological wellbeing in a UK sample.*

Methods: *A randomised controlled trial to examine the efficacy of a three-week gratitude intervention in promoting psychological and physical health. 108 healthy participants (aged 18–36) were randomly assigned to 1 of 2 conditions (gratitude or no-assigned activity). Those in the gratitude condition kept daily gratitude journals for 21 days. Participants completed self-report measures related to gratefulness, affect, prosociality, physical and subjective wellbeing. These measures were collected at two time-points (pre- and post-intervention), three weeks apart. Two separate analyses were conducted for participants who completed the intervention (Completer analysis) and including those who dropped out (Intention-to-treat analysis [ITT]).*

Findings: *Completer analysis revealed that the gratitude condition resulted in heightened feelings of gratefulness. Those in the grateful condition showed greater increases in state gratitude and positive affect, relative to the control condition, who reported a reduction in wellbeing. Overall, the ITT analysis yielded essentially the same findings as the completer analysis.*

Discussion: *Counting one's blessings can improve wellbeing and could be incorporated in existing psychotherapies. This brief and simple intervention warrants further investigation.*

Keywords: *Gratitude; positive affect; wellbeing; health; positive psychology interventions.*

Introduction

Studies that aimed to promote wellbeing have shown that individuals with positive mental health hold numerous physical, social and intellectual benefits compared to their unhappy counterparts (Fredrickson, 2001). This increased emphasis on positive phenomena has led the United Nation General Assembly to review the approaches to systematic measurements of happiness at the individual and national level (Layard, 2013). Although there are various ways to increase wellbeing, the cultivation of gratitude is thought to be the quintessential positive personality trait, allowing individuals to lead a flourishing life (Wood et al., 2009).

Conceptualisation of gratitude

Gratitude is considered as both trait and state. State gratitude is the feeling of awe, gratefulness and appreciation for outcomes received (McCullough et al., 2002). Emmons (2007) characterizes these experiences as acute, intense and co-occurring with joyful feelings. Trait gratitude is described as an individual's predisposition to experience this state in life (McCullough et al., 2002).

Theoretically, being thankful in life is expected to be strongly associated to wellbeing. This is explained in the *schematic hypothesis* (Wood et al., 2010), which claims that grateful individuals are more likely to

notice the positivity in life, and this influences how they interpret their life events (Wood et al., 2010). Watkins (2004) elaborated that in times of adversity, gratitude shifts one's mindset of deprivation to appreciation; this particular interpretative lens enhances subjective wellbeing. Drawn from Fredrickson's (2001) *broaden-and-build theory*, positive emotions like gratitude broadens through thought-action repertoires which builds a person's psychosocial and spiritual resources. The broadening hypothesis is compatible with aforementioned accounts of the mechanisms linking gratitude to wellbeing. As Fredrickson (2001) suggested, gratitude facilitates '*meaning-finding*' in ordinary events and within the adversity itself. This may fuel psychological resilience, leading to appreciable increases in emotional wellbeing over time (Kashdan & Rottenberg, 2010). Although emerging perspectives complementing this notion have highlighted the inter-intrapersonal benefits of gratitude (McCullough et al., 2001), the effects of gratitude on human health identified thus far are likely just the tip of the proverbial iceberg.

Empirical research on gratitude and wellbeing

Emmons and McCullough (2003) employed a self-guided journal method to determine the effect of gratitude on wellbeing among college students. Their findings revealed that those who recorded grateful thoughts had positive results (i.e. increased in positive emotions, altruistic behaviour and fewer physical complaints). Grateful contemplation reduces excessive worrying and levels of depression over time (Wood et al., 2007). Whilst other research demonstrated grateful individuals reported less post-traumatic symptoms when compared to their less grateful counterparts following a stressful life-event (Wood et al., 2010).

A meta-analysis has shown that the impact of gratitude practice on wellbeing and its efficacy is moderated by various factors

(Wood et al., 2010). For instance, previous control groups used in gratitude intervention involved downward social comparison, writing about earliest memories, and listing hassles. The diverse control conditions may not generate equal expectancy effects as the gratitude condition. This makes it problematic to infer the effectiveness of the intervention. Moreover, some studies did not explore whether gratitude was successfully cultivated (Sin et al., 2009) leaving doubts to its positive changes.

To explore these issues, we replicated Emmons and McCullough's (2003) study. We included validated scales (e.g. the Gratitude Adjectives Checklist [GAC] and Gratitude Dispositional Scales [GQ-6]) to track the changes in gratitude. A control group without any assigned activity was used to minimise expectancy effects, allowing us to gauge the true effect of the intervention. We utilised both completer and intention-to-treat analysis (ITT). Given that the intervention will not be effective for everyone, we also explored the relationship between effort and time taken to perform the intervention and outcome.

Predictions

We predict that a grateful contemplation would result in higher levels of state and trait gratitude, positive affect and wellbeing. Participants in the gratitude condition would score higher on the perception of interpersonal quality and report fewer physical complaints compared to participants in the control condition.

Methods

Design

A three-week experimental randomised controlled trial (RCT) was employed to address the research aim. The independent variable comprised of two experimental conditions: (1) Gratitude (participants assigned with gratitude-inducing activity) and (2) Control (no assigned task). Both groups were measured at two time points,

three weeks apart: (a) Pre-test (prior to intervention); (b) Post-test (immediately after intervention).

Participants

Eligible participants were students from a university in the UK, age range 18–21, able to read and write English; recruited via online advertisement and the face-to-face approach. In an effort to minimise unintended variation in the procedure, both approaches utilised standard instructions that participants read themselves.

The study was advertised as 'A Study on Human Emotions' to mask the trial hypotheses. The face-to-face method contains a set of questionnaires and consent form in a sealed envelope which were distributed randomly in the campus. Those who agreed to participate then signed the consent form and returned the required documents to the investigator. For the online recruitment, interested candidates commenced the study via a web-link, completion of baseline measures was considered as informed consent.

A total 108 participants (62 females, 46 males) were recruited and randomised into either the gratitude ($N=51$) or the control ($N=57$) condition. The average age was 22 years ($SD=2.85$), with over 65 per cent unemployed university graduates. Almost half of the sample was White (53.7 per cent), and the rest was Asia/Pacific Islander (41.7 per cent). The final analysis included 36 in the gratitude condition and 45 in the control group, 27 participants (gratitude=15, control=12) dropped out from the study.

Measures

At baseline participants were asked to provide demographic information, including age, sex, education, employment status, and ethnicity. Participants completed additional measures relating to gratitude, affect, well-being, health complaints and perceived quality of interpersonal relationship at baseline and 21 days after intervention. All measures were administered online.

State and dispositional gratitude (GAC and GQ-6) (McCullough *et al.*, 2002). The Grateful Adjectives Checklist consists of three adjectives (appreciative, thankful, and grateful) to examine participant's feelings of state gratefulness on a 5-point Likert scale (1=not at all, 5=extremely). Scores range from 3 to 15, higher scores indicates higher levels of state gratitude.

The Gratitude Dispositional Scales assesses an individual's disposition to experience this state. It has six descriptive items that is scored on a 7-point Likert scale (1=strongly disagree, 5=strongly agree). Scores range from 6 to 42.

Positive and negative affect scale (PANAS) (Watson, Clark, & Tellegen, 1998). The PANAS includes 20 affective states rated on a 5-point Likert scale (1=very slightly, 5=extremely). Scores range from 10 to 50 and higher scores indicate higher levels of positive or negative emotions experienced.

Warwick-Edinburgh mental wellbeing scale (WEMWBS) (Tennant *et al.*, 2007). The WEMWBS is a 14-item questionnaire that measures mental wellbeing on a 5-point Likert scale (1=none of the time, 5=all of the time). Scores vary from 14 to 70, higher scores indicates higher levels of mental well-being.

Physical symptoms checklist (Emmons & McCullough, 2003). A list of 13 physical symptoms (e.g. runny/congested nose, headache and etc.) requires participants to indicate whether they had experienced these symptoms for the past two weeks. Participant's perceived health status was obtained by summing up the symptoms experienced.

Quality of relationship with significant others (Martinez-Marti *et al.*, 2010). Four items rated on a 4-point Likert scale (1=not at all, 4=a great deal) was used to assess the participant's quality of relationship with close others.

An exploratory effort and motivation form was given to participants at post-intervention. The form included questions developed by Odou *et al.* (2013) to assess participant's

effort (e.g. on average how many minutes did it take you to complete your activity?) and motivation (e.g. how motivated did you feel about doing the activity?) on a 5-point Likert scale (1=not at all, 5=extremely).

To measure adherence for the assigned activity, participants were asked to answer a question on a 7-point Likert scale (1=never, 7=daily). The question was *'We understand that at some point there are circumstances that cause you to be unable to carry out the assigned activity as intended. We appreciate your honesty to indicate throughout these 21 days, how often you think you actually did the assigned activity.'*

Procedure

Participants who provided consent and completed baseline measures were assigned an identification number that can only be identified by the researcher. They were then randomised to the experimental conditions using a computer software package (Urbaniak & Plous, 2013). After randomisation, specific instructions were given to participants according to their respective groups. Participants in both conditions were contacted by mail before, during and after 21 days of the intervention to complete their online measures.

The gratitude condition received an instruction to cultivate gratefulness for 21 days. The information to perform the gratitude-inducing activity incorporated instructions from both studies (Emmons & McCullough, 2003; Martinez-Marti et al., 2010). The instructions were:

'There are many things in our lives, both large and small, that we might consider as a form of blessing. It could even be those who help us to reach our goals, or just make our lives easier with small details. If we try to put ourselves in their shoes, appreciate their efforts, and notice the voluntary nature of their acts, we have a good reason to feel grateful. Please think of today and write down three things in your life that you are grateful for.'

They were required to record their daily grateful thoughts in a journal that was provided. To encourage adherence they

were invited to submit their journal on an appointed date after post-test. Participants in the control condition were not assigned any activity, but to complete the same measures given to the gratitude condition.

Analytic plan

Descriptive statistics were generated for the total sample. Missing cases (<5%) were addressed with means substitution. Two-way mixed ANCOVA was used to test for change over time among participants who completed the intervention versus control. Effects were calculated for *time* and *time × group* interactions. Covariates were ethnicity and gender because randomisation revealed unequal distributions of these variables in the experimental conditions. Pearson's correlation was used to explore the relationship between individual's engagement (e.g. effort and motivation) and the effects of gratitude practice.

Two analyses were conducted – *Completer analysis* (participants who completed the intervention) and *Intention-to-treat (ITT) analysis* (included participants who dropped out). The ITT was carried out using the last observation carried forward (LOCF) method. For all hypotheses testing, it is expected that participants in the gratitude condition would have better outcomes than the control condition.

Results

We only present the main findings for completer analysis (Table 1) because all measures yielded essentially the same results as the ITT analysis.

Dispositional and state gratitude

The main effect of group on dispositional gratitude scores was significant [$F(1, 77)=4.892$, $p=.030$, partial $\eta^2=.060$]. The condition \times time interaction for dispositional gratitude was also significant [$F(1, 77)=4.84$, $p=.044$, partial $\eta^2=.052$]. Dispositional gratitude decreased in the control condition relative to the gratitude intervention (see Table 1).

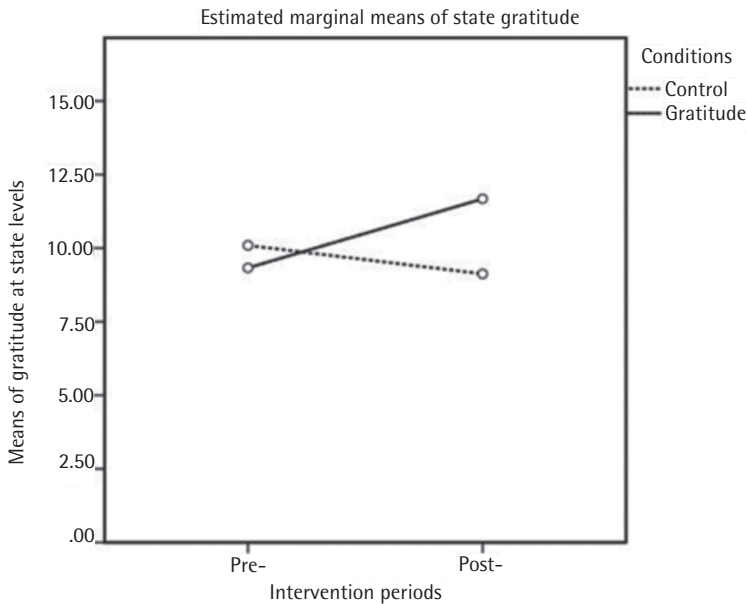


Figure 1: Change in state gratitude from pre- to post-intervention for the gratitude group condition versus the control group condition.

The condition × time interaction for state gratitude was significant [$F(1, 77)=8.48$, $p=.005$, partial $\eta^2=.099$]. State gratitude increased in the gratitude intervention (see Figure 1). Thus, those who practiced gratitude had higher levels of state and trait gratitude relative to the control condition.

Positive affect

The condition × time interaction for positive affect was significant [$F(1, 77)=4.90$, $p=.030$, partial $\eta^2=.060$] – see figure 2.

Wellbeing

The completer analysis for the condition × time interaction for well-being measure was of borderline significance ($p=.053$); however, the results for the ITT analysis was significant [$F(1, 104)=4.73$, $p=.032$, partial $\eta^2=.043$]. There was greater drop in wellbeing in the control condition (see Table 1).

Physical health

Table 1 showed no difference was observed

for reported physical illness ($p=.055$) in both experimental conditions.

Perceived quality of interpersonal relationships

For participants in the gratitude condition, the perception of relationship quality with others was not significantly different ($p=.871$) than the control condition (see table 1).

Individual differences in practicing gratitude

Motivation and effort were positively correlated with increase in state gratitude, motivation ($r=.333$, $p=.047$) and effort ($r=.414$, $p=.012$). Participants with greater motivation were more likely to adhere to the activity ($r=.321$, $p=.046$) and have higher well-being scores ($r=.331$, $p=.049$). Motivation and effort, however, was not significantly related to dispositional gratitude and both the affectivity scores.

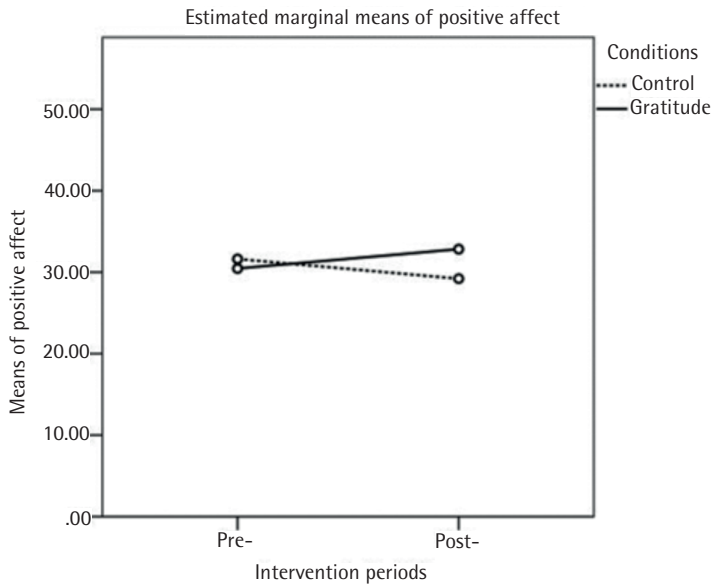


Figure 2: Change in positive affect from pre- to post-intervention for the gratitude group condition versus the control group condition.

Table 1: Completer analysis on the effects of gratitude intervention in the experimental and control group (N=81).

Measures	Pre-test mean (SD)		Post-test mean (SD)		Time		Group × time interactions	
	GRAT	CTRL	GRAT	CTRL	F-ratio	p	F-ratio	p
WEMWBS	46.17 (10.00)	45.69 (9.38)	45.50 (10.81)	39.47 (13.87)	5.110	.027*	3.87	.053
PANAS PA	31.38 (8.31)	30.87 (7.13)	33.47 (8.23)	28.69 (8.22)	1.987	.163	4.895	.030*
NA	22.00 (9.05)	21.93 (7.65)	20.83 (6.62)	23.38 (8.93)	.147	.703	1.753	.189
GAC	9.83 (3.87)	9.69 (2.75)	11.67 (2.55)	9.13 (3.62)	.416	.521	8.476	.005**
GQ-6	33.44 (5.99)	31.82 (6.18)	33.36 (5.80)	28.16 (8.86)	7.884	.006**	4.184	.044*
Perceived quality of relationship	14.39 (4.44)	13.36 (3.15)	13.61 (2.50)	12.78 (3.40)	.496	.483	.871	.354
Physical symptoms	4.46 (2.98)	5.07 (3.20)	3.77 (3.01)	4.34 (3.11)	5.563	.021*	.055	.816

* p < .05;

** p < .01

Discussion

One approach to boost an individual's contentment is the deliberate practice of counting one's blessings. To date, grateful induction to alter one's dispositional gratitude has not been investigated in a systematic manner (Emmons, 2007). Future work can explore whether continuous practice of gratitude-oriented activities increases a person's disposition toward gratitude.

Some may express gratefulness only under certain circumstances (Watkins, 2004). Through journaling one's grateful thoughts, we can determine whether the immediate feelings of gratefulness can be cultivated. Our results suggest that keeping a gratitude journal increases state gratitude; this is congruent with findings from previous studies (Emmons & McCullough, 2003; Martínez-Martí et al., 2010).

Another main finding emerged from this study is that participants who practiced gratitude had more positive affect (PA) and less negative affect (NA) compared to the control condition. Gratitude may operate through *savouring* – a conscious focus on one's fortunate moments that could have been otherwise (Bryant, 2003). Our gratitude intervention may have successfully increased PA through the accessibility and retrievability of pleasant memories (Watkins, 2004), contributing to one's subjective wellbeing. Consistent with Emmons and McCullough's (2003) study, the gratitude intervention did not lead to significant reduction in NA. Nevertheless, the mean scores for NA were in the expected direction. The attrition rate (over 30 per cent) may have led to insufficient power to detect significant differences.

We found that those who keep a gratitude journal had relatively stable wellbeing scores. Fredrickson's (2001) *broaden-and-build* model suggests that gratitude harnesses behavioural and cognitive repertoires by '*undoing*' the adverse effects of negative emotions. Grateful responses to life – as Fredrickson (2001) claimed, build enduring coping resources to stabilise mood when

stressful life-events arise. Several studies (e.g. Tugade & Fredrickson, 2004) support this interpretation.

Somewhat contrary to our expectations, gratitude appeared to worsen the perception of relationship quality. Gratitude prototypically, stems from the recognition of received aid is evaluated as costly and altruistic (Wood et al., 2007). It is possible that the expression of gratitude causes momentary experiences of '*indebtedness*' – an obligated feeling to return the giver the valuable act (Emmons, 2007). Indebtedness is associated with feelings of shame and guilt (Emmons, 2007) which may complicate or reduce the quality of interpersonal relationships. Both '*thankfulness*' and '*indebtedness*' are embedded in reciprocity, but the subtle differences in appraising the benefactor's intentions (*benevolent vs. ambiguous*) determines the recipient's emotional responses (Tsang, 2006). This suggests that received benefits should be considered when future research examines its interaction with interpersonal consequences.

Regarding physical wellbeing, there were no differences between conditions. Though the main effect of time revealed significant changes across conditions, both groups reported having experienced less physical symptoms.

The current study sought to examine how a person's motivation and effort influence the success of the intervention. The findings showed participants who put greater motivation and effort into the gratitude-inducing activity had increased feelings of gratefulness. This is consistent with previous studies (Sheldon & Lyubomirsky, 2006), which suggested that when the mood-enhancing activity '*fits*' the person's interest and values and is performed with appropriate effort, the goal of developing a grateful thinking is achievable.

Changes in wellbeing, however, were not significantly correlated with effort. Volitional activities like the gratitude-inducing exercise require commitment and a certain amount of effort to initiate, engage, and maintain

the activity (Sin et al., 2009). As Sheldon et al. (2006) stated, if a person yearns for happiness but does not exert any effort to practice the mood-enhancing strategy, they may not experience significant increase in wellbeing. While motivation and effort are important variables for continued adherence to the activity (Lyubomirsky et al., 2011), only motivation was positively correlated with adherence in this study.

Limitations

First, the randomisation was not entirely successful as some differences between groups were evident in pre-intervention. This was dealt with by including these variables as covariates in the analyses. Second, reduction in sample size due to attrition resulted in reduced power to detect significant changes; however our ITT results were very similar. Last but not least, the lack of longer-term follow-up means that we cannot comment on the sustainability of intervention effects.

Future directions

Although the current findings have advanced our understanding of how gratitude affects an individual's wellbeing, many questions remained unanswered. Pre-existing traits (e.g. trait gratitude or affective traits) may affect an individual's ability to benefit from the gratitude intervention (Emmons, 2007).

Can we expect gratitude induction to work better in improving health outcomes of less or more grateful individuals? Further research is required to explore the trait-moderator link.

Conclusion

Our results suggest that the count-your-blessings approach may be an effective technique to increase individuals' predisposition to experience gratitude. A mindfulness appreciation helps individuals to focus on benefits (Emmons, 2007). Future studies are required to test the effectiveness of gratitude interventions against active control conditions and other psychological interventions. This study shows that a simple count-your-blessings intervention can improve psychological wellbeing and could potentially be included alongside existing psychological interventions.

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References

- Bryant, F.B. (2003). Savouring beliefs inventory (SBI): A scale for measuring beliefs about savouring. *Journal of Mental Health, 12*(2), 175–196. doi: 1080/0963823031000103489
- Emmons, R.A. (2007). *Thanks! How the new science of gratitude can make you happier*. New York: Houghton Mifflin Company.
- Emmons, R.A. & McCullough, M.E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology, 84*(2), 311–389. doi: 10.1037/0022-3514.84.2.3.77
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226.
- Layard, R. (2013). First world happiness report launched at the United Nations. Retrieved from <http://www.earth.columbia.edu/articles/view/2960>
- Martínez-Martí, M.L., Avia, M.D. & Hernández-Lloreda, M.J. (2010). The effects of counting blessings on subjective well-being: A gratitude intervention in a Spanish sample. *The Spanish Journal of Psychology, 13*(2), 886–896.
- McCullough, M.E., Emmons, R.A. & Tsang, J.A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*, 112–127.
- Odou, N. & Vella-Brodrick, D.A. (2013). The efficacy of positive psychology interventions to increase well-being and the role of mental imagery ability. *Social Indicators Research, 110*, 111–129. doi: 10.1007/s11205-011-9919-1
- Sheldon, K.M. & Lyubomirsky, S. (2006). How to increase and sustain positive emotion: The effects of expressing gratitude and visualising best possible selves. *The Journal of Positive Psychology, 1*(2), 73–82. doi: 10.1080/17439760500510676
- Sin, N.L., Della Porta, M.D. & Lyubomirsky, S. (2009). Tailoring positive psychology interventions to treat depressed individuals. In S. I. Donaldson, M. Csikszentmihalyi, & J. Nakamura (Eds.), *Applied positive psychology: Improving everyday life, schools, work, health, and society*. New York: Routledge.
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., et al. (2007). The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes, 5*(1), 63–75. doi: 10.1186/1477-7525-5-63.
- Tugade, M.M. & Fredrickson, B.L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology, 86*, 320–333.
- Urbanik, G.C. & Plous, S. (2013). Research Randomizer (Version 4.0) [Computer software]. Retrieved on June 22, 2013, from <http://www.randomizer.org/>
- Watkins, P.C. (2004). Gratitude and subjective well-being. In R.A. Emmons & M.E. McCullough (Eds.), *The Psychology of Gratitude* (pp.167–192). New York: Oxford University Press.
- Watson, D., Clark, L.A. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.
- Wood, A.M., Froh, J.J. & Geraghty, A.W.A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review, 1*-16. doi: 10.1016/j.cpr.2010.03.005
- Wood, A.M., Joseph, S. & Linley, P.A. (2007). Coping style as a psychological resource of grateful people. *Journal of Social and Clinical Psychology, 26*, 1108–1125.