

ABSTRACT

Relationship Between Gratitude and Quality of Life in Adolescents

Grace Elliott

Director: Christine A. Limbers, Ph.D.

Gratitude has been identified as an important dispositional trait which can impact multiple aspects of life. However, there has been an absence of research examining the associations between gratitude and quality of life in healthy populations of adolescents. This study assessed the relationship between gratitude and quality of life. Data was collected from 52 high-school students who completed assessments of both gratitude and quality of life. Analysis of the data revealed a strong, positive relationship between gratitude and quality of life ($r = .503, p < .001$) along with moderate relationship between self-reported gratitude and each of the PedsQL subscales ($r = .391, p < .005$ to $r = .440, p < .005$). As a secondary question, parent-report gratitude was recorded to assess the level of agreement between self and parent-reported gratitude. Of the total participants, 18 returned the proxy report of gratitude, and analysis of intraclass correlation revealed an adequate degree of reliability between self and parent-reported gratitude. These findings indicate that gratitude is an indicator of quality of life during the critical phase of adolescence and that the cultivation of gratitude may lead to greater levels of quality of life. The reliability of parent-reported gratitude further supports research which only has access to proxy reports of well-being.

APPROVED BY DIRECTOR OF HONORS THESIS:

Dr. Christine Limbers, Department of Psychology & Neuroscience

APPROVED BY THE HONORS PROGRAM:

Dr. Elizabeth Corey, Director

DATE: _____

RELATIONSHIP BETWEEN GRATITUDE AND QUALITY OF LIFE IN
ADOLESCENTS

A Thesis Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the Requirements for the
Honors Program

By
Grace Elliott

Waco, Texas
April, 2020

TABLE OF CONTENTS

Chapter One: Introduction	1
Chapter Two: Method and Materials	8
Chapter Three: Results	11
Chapter Four: Discussion	13
Appendix: Complete List of Tables	16
Bibliography	18

CHAPTER ONE

Introduction

Gratitude

There are differences in how researchers define gratitude. Some researchers focus on gratitude as a transitive, emotional experience which is in response to a benevolent act (e.g., Algoe, Haidt, & Gable, 2008). Others define gratitude as a virtue or disposition which informs behavior (e.g., Hill, Allemand, and Roberts, 2013). In the current thesis, I will focus on gratitude as a virtue that is “part of a wider life orientation towards noticing and appreciating the positive in the world” (Wood, Froh, & Gerarghty, 2010, p. 891).

Gratitude in Adults

A lot research has focused on psychosocial outcomes of gratitude in young adults and adults. Factors such as prosocial behavior are more easily related to a typical social characteristic such as gratitude because prosocial acts tend to be more quantifiable. In one study on the relationship between gratitude and prosocial behavior in young adults, Tsang (2006) assigned participants to a resource distribution task with another fake participant. Depending on their condition, the participant was given more resources either by chance or because of the generosity of their “partner”, which was the gratitude generating condition. Those in the gratitude generating condition were shown to be less motivated to keep the resources for themselves, which reveals that gratitude can encourage prosocial behavior.

Furthermore, gratitude helps build and inform relationships. A study found that gratitude helps build relationships in young adults, and this was found to be a function of gift-giving behavior during a sorority's "Big/Little" week (Algoe, Haidt, & Gable, 2008). Those who self-reported higher levels of gratitude during this week were more likely to feel connected to their new sorority. The researchers found the gift giving behavior and the subsequent gratitude of the recipients during "Big/Little" week was related to a stronger feeling of connection between the new member of the sorority, her "Big Sister", and the sorority at large (Algoe, Haidt, & Gable, 2008).

There are some data that indicate gratitude might not play as large of a role in relationships that are well-established. Bar-Tal and colleagues (1977) found that the type of relationship a person had with a participant, either stranger, acquaintance, friend, or family member, could predict the participant's relative levels of gratefulness after receiving help. The more personally connected the participant was (e.g., siblings versus close friends) the less grateful they were for the assistance. A more recent study by Rotkirch and colleagues (2014) found that participants felt less grateful for reciprocated prosocial behaviors from a same-sex sibling than a same-sex friend. Although this study did not investigate the differences in personal closeness between benefactor and beneficiary as Bar-Tal and colleagues study had, it still indicates that gratitude plays different roles in maintaining bonds for various types of relationships.

Hill, Allemand, and Roberts (2013) one of the first studies to assess health outcomes and gratitude found that a grateful disposition leads to a healthier life. For example, participants with a more grateful disposition had a higher likelihood of exercising or participating in other healthy activities. Gratitude has also been found to be

related to better mental health. Wood and colleagues (2008) found that, over time, higher levels of gratitude were correlated with lower levels of depression and stress. The researchers also found that there was not a bi-directional relationship between gratitude and well-being. Therefore, gratitude is related to lower levels of depression and stress, but lower levels of depression and stress are not related to higher levels of gratitude. Fritz and colleagues (2019) found that gratitude may generally be related to self-improvements like healthy eating habits.

Gratitude in Adolescents

Fewer studies to date have examined the construct of gratitude in children and adolescents. O'Brien, Mendonça, and Price (2018) found that children, ages 7 to 14 years will express different types of gratitude throughout childhood. For example, children closer to age 7 years will express more verbal gratitude than virtue-related gratitude compared to older children closer to age 14 years. Older children, on the other hand, were more likely to report expressions virtue-related gratitude than verbal gratitude. However, Freitas, Merçon, Palhares, and Tudge (2019) studied the differences in gratitude between adolescents and children. They found verbal gratitude increased with age, but virtue-related gratitude remained stable across ages. The focus of research for gratitude in adolescents has largely been the cultivation of the trait. This is an important area of research, as gratitude has been shown to be related to higher levels of subjective well-being in adolescents (Tian et al., 2016).

Having a grateful disposition has been shown to lead to healthier lifestyles in adolescents. Most research has focused on the relationship between gratitude and mental health outcomes in adolescents (e.g., Jiang, Ren, Zhu, & You, 2020). Gratitude has been

found to be a protective factor against suicidal ideation, (Kwok, Gu, & Cheung, 2019). In this study, researchers found that gratitude not only protected against suicide ideation, but also mediated the effect of childhood emotional abuse on suicide ideation. In addition, Li and colleagues (2012) found that gratitude and suicide attempts were negatively associated. The researchers asserted the underlying mechanism is self-esteem. Those adolescents who had higher ratings of gratitude also had higher ratings of self-esteem, which is linked to lower levels of both suicide ideation and attempt. Interestingly, it has further been shown that the STEP (Skills to Enhance Positivity) program which aims to increase positive affect through exercises targeted at mindfulness and gratitude showed promising results to help decrease suicidal behaviors in adolescents (Yen et al., 2019).

There has been some research aimed at assessing the relationship between gratitude and physical health in youth. In one experiment assessing gratitude intervention and its effect on healthy eating behaviors, Fritz and colleagues (2019) found that a gratitude-generating intervention for 9th and 10th grade students was related to healthier eating behaviors. In addition, gratitude can serve as a protective factor against risky sexual behavior (Ma, Kibler, & Sly, 2013). Researchers found that life-orientation gratitude in particular was negatively associated with risky behaviors such as being sexually intimate, sexually intercourse, likelihood of engaging in sexual intercourse in secondary school, and likelihood of drinking alcohol and taking drugs. Further, Ma and colleagues (2013) found moral affect gratitude was more positively related to protective factors (e.g., academic performance) than life-orientation gratitude.

Quality of Life and Gratitude

The World Health Organization (WHO) defines quality of life as an “individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person’s physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment” (The WHOQOL Group 1995, p. 1405). Quality of life is considered an important health outcome as it evaluates one’s subjective perception of their functioning within multiple domains (Ponizovsky et al., 2003). In adult populations, there have been several studies that have assessed the associations between gratitude and quality of life in very specific populations. For example, Valikhani and colleagues (2019) measured the quality of life, gratitude, and mental health of 315 male soldiers in Iran. They found that the relationship between gratitude and quality of life was mediated by stress and mental health. Another specific population targeted has been the elderly. Ramirez and colleagues (2014) tested the efficacy of an intervention to increase quality of life and gratitude in adults older than 60. The researchers found that the intervention did, in fact, increase life satisfaction, happiness, and gratitude. Another study by Smedema (2020) found that gratitude was a strong indicator of higher levels of quality of life in patients with Multiple Sclerosis.

Similarly, most research with adolescents that has assessed quality of life has focused on unhealthy populations such as adolescents with cancer (Chen et al., 2020). This leaves a large portion of the population (i.e., healthy adolescents) understudied. It is of particular importance to find factors that relate to quality of life because adolescence is

a time in a person's life during which life satisfaction can decrease and depression can become more prevalent (Goldbeck et al., 2007). For example, one study found that adolescents who experience bullying have poorer quality of life (Frisén & Bjarnelind, 2010). Existing research with adolescents that has evaluated gratitude has also been more likely to include general measures of well-being rather than quality of life. For example, Tian and colleagues (2016) investigated the relationship between gratitude and subjective well-being (SWB) in school for adolescents. They found that gratitude did have a positive relationship with SWB, and that some psychosocial factors mediated the relationship. However, unlike comprehensive measures of quality of life such as the Pediatric Quality of Life Inventory (PedsQL), the SWB measure only gives indications of school satisfaction and affect in schools subscales. Finally, there has been an absence of research investigating the level of agreement between parent and adolescent perceptions of adolescent gratitude (Hoy, Suldo, & Mendez, 2013). This is noteworthy because in some circumstances clinicians might have to rely on parent-reports of their adolescent's gratitude. If parental perceptions are not in agreement with adolescent perceptions of their own levels of gratitude, it might call into question relying on parent proxy reports.

Present Study

Based on the gaps identified in the empirical literature, the present study seeks to identify the associations between gratitude and quality of life in a healthy sample of adolescents. In addition, subjective levels of gratitude of the adolescent along with perceived levels of gratitude by the adolescent's parent will be measured. It is hypothesized that measures of gratitude will be positively associated with measures of quality of life in adolescents. It is also predicted that agreement between parent

perceptions of adolescent gratitude and adolescent perception of their gratitude will be in the low to moderate agreement range.

CHAPTER TWO

Method and Materials

Participants

There were 52 high school students from local Waco high schools. The participants were recruited through a brief presentation to an assembly of students and classes. The sample size was not predetermined, and participants were recruited up to the point of data analysis. Interested students were given a packet which included a brief letter explaining the research, a consent form, an assent form, and the parent version of the GQ – 6 questionnaire.

Measures

Gratitude Questionnaire 6

The scale used to measure gratitude in adolescents was the Gratitude Questionnaire 6 (GQ – 6) developed by McCullough and colleagues (2002). It has a Likert-type, seven-point response scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*). The GQ-6 includes items the “I have so much to be thankful for”, “If I had to list everything that I felt grateful for, it would be a very long list”, “When I look at the world, I don’t see much to be grateful for”, “I am grateful to a wide variety of people”, “As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history”, and “Long amounts of time can go by before I feel grateful

to something or someone” (McCullough et al., 2002). The measure was originally developed with adults, however, in adolescents the GQ-6 has been shown to have good internal consistency ($\alpha > .70$) and medium to strong convergent validity with other measures of gratitude such as the Gratitude Adjective Checklist (Froh et al., 2011).

A modified version of the GQ – 6 was provided to parents in order to measure parental perspectives of their adolescent’s gratitude. It used the same scale and questions as the GQ – 6 self-report version, however, the subject was changed from first to third person. Peer rated validity (ratings from a person to whom the participant was close) was good when using third-person versions of the GQ – 6 (McCullough et al., 2002).

Pediatric Quality of Life Inventory version 4.0 (PedsQL)

The scale used to measure quality of life in adolescents was the Pediatric Quality of Life Inventory (PedsQL) Teen Report for ages 13 to 18 years. The scale is made up of 23 items divided between 4 subscales which measure emotional, social, school, and physical functioning. It uses a Likert-type, five-point response scale ranging from 0 (*Never*) to 4 (*Almost Always*). The PedsQL includes items such as “It is hard for me to walk more than one block” and “I feel afraid or scared”. The measure can adequately distinguish between patient and non-patient populations (Varni, Seid, & Kurtin, 2001). Total score and subscales were internally consistent ($\alpha > .70$) (Varni, Seid, & Kurtin, 2001).

Demographic Questionnaire

A demographic questionnaire was included in the packet of questionnaires given to the adolescent participants. The demographic questionnaire included questions about age, gender, race/ethnicity, parental education attainment, height, and weight.

Procedure

A packet including a letter explaining the study, consent form, assent form, and parent-report version of the GQ – 6 was sent home with each participant. A smaller subsample of students brought back the completed parent-report version of the GQ – 6. If the participant returned the completed consent and assent form, or just the assent form if the participant was over 18, each student was given a packet of questionnaires. In the packet was a brief demographic questionnaire, the Peds QL, and the GQ-6. Each student was asked to complete the questionnaire to the best of their ability, and any questions they had were answered by the primary investigator. Afterward, the participants were thanked for their participation, and the questionnaires were collected.

Statistical Analysis

Descriptive statistics were calculated for the demographic variables of the sample. Analysis of Pearson's Product Moment Correlations between the GQ – 6 and PedsQL and its subscales were examined for any associations.

CHAPTER THREE

Results

Table 1 contains demographic information for the sample. Of the 52 participants, 31 were male and 21 were female. Most were white (67%), followed by Hispanic (15.4%), black (7.7%), mixed race (5.7%), and other (3.8%). The mean age of the sample was 17.33 years ($SD = 1.23$). The age of participants ranged from 15 to 19 years, and the majority were 18 years old (57.7%). An even portion of the parents or guardians of the participants had a high school degree or less (50%) or a college degree and higher (50%). The average self-report gratitude score was 5.77, the average parent-report gratitude score was 5.69, and the average quality of life score was 73.69.

Pearson's Product Moment Correlation were computed. Table 2 presents these correlations. There was a strong, statistically significant correlation between self-reported gratitude and the PedsQL Total Score ($r = .503, p < .001$). There was a medium, statistically significant correlation between self-reported gratitude and school functioning ($r = .391, p < .005$), gratitude and social functioning ($r = .440, p < .005$), gratitude and mental functioning ($r = .411, p < .005$), and gratitude and physical functioning ($r = .429, p < .005$).

Gender was the only demographic variable associated with self-reported gratitude ($r = .321, p < .05$). Being a girl was correlated with higher self-reported gratitude.

For the 18 participants who had both self-report and parent-report on the GQ-6, a moderate degree of agreement was found between ratings of gratitude from

parent/guardian perception and adolescent perception. The intraclass correlation was .778 with a 95% confidence interval from .425 to .916 ($F(17, 17) = 4.636, p < .005$).

CHAPTER FOUR

Discussion

In the present study, the association between gratitude and quality of life was assessed. Additionally, with a smaller subsample, level of agreement between self and parent-report gratitude was assessed. The hypothesis about the positive relationship between measures of gratitude and quality of life was supported by the data. In addition, the hypothesis that self and parent-report gratitude would have low to moderate agreement was also supported by the data.

There were no demographic variables significantly related to either Total Score quality of life or the PedsQL subscales. This is interesting in light of previous studies which have found that female adolescents tend to rate lower on levels of well-being (Ma, Zeng, & Ye, 2015). Female adolescents, however, did have a significant positive relationship with self-report gratitude. This supports previous findings which indicate that adolescent girls tend to report higher ratings of gratitude (Froh, Yurkewicz, & Kashdan, 2009). Higher rates of gratitude among females in this sample might be attributed to previous research that suggest women tend view themselves as more interdependent than men and rely more on social relationships to boost their self-esteem (Cross & Madson, 1997). Therefore, women may prioritize social relationships and gratitude plays a role in maintaining those relationships (e.g., Algoe, Haidt, & Gable, 2008).

The strong, positive association between gratitude and quality of life supports previous research. Many studies on the associations between gratitude and positive

outcomes have focused on general well-being especially when measured in relation to gratitude (e.g., Tian et al., 2016). Quality of life has been closely linked to measures of general well-being (Camfield & Skevington, 2008). Although a measure of gratitude could not replace measures of quality of life, based on the data, it might be used as an indicator of quality of life.

The causal relationship between gratitude and quality of life was not assessed in the present study. There needs to be more research to conclude both directionality of the relationship and causation of the relationship. There have been a number of experimental studies on the cultivation of gratitude in adolescents (Baumsteiger et al., 2019; Fritz et al., 2019; Froh et al., 2009). It could be beneficial in future research to combine an experimental study of the cultivation of gratitude and its direct effect on quality of life.

It is not only enlightening to know that gratitude and quality of life are positively related, but also to which domains gratitude is most closely associated. Each of the subscales of the PedsQL was moderately positively associated with gratitude, which suggest that having specific domains of measurement might be beneficial when assessing the positive life outcomes of gratitude than more general measures of well-being. For example, in this study, gratitude was most closely associated with social functioning. This finding is supported by previous research indicating gratitude can play a socially cohesive role in forming and maintaining relationships (Algoe, Haidt, & Gable, 2008; Bar-Tal et al., 1977; Rotkirch et al., 2014). More general ratings of well-being could not give insight to this domain of quality of life.

There was a low to moderate level of agreement between self and parent-report gratitude. There have not been many studies investigating peer-rated reliability for proxy-

report gratitude. However, McCullough et al., 2002 did create a peer-report gratitude scale while developing the GQ-6. Consistency between ratings could give insight to consistency between internalized gratitude and externalized gratitude as well as proving the reliability of parent-report gratitude.

The main limitation of the present study is the sample of participants. Only 52 students were able to complete the survey, and of those students, about half were 18 years of age and older. The purpose of this study was to investigate the distinct relationship between gratitude and quality of life in adolescents, and older age of the participants might have biased the sample. In addition, although the GQ – 6 has been shown to have strong convergent validity with other measures (Froh et al., 2011), the dimensions of gratitude might be better assessed with a more robust measure of gratitude. It is also important to note the GQ – 6 measures dispositional gratitude, not state gratitude, which might have different implications for the relationship between gratitude and quality of life.

In conclusion, this study provides preliminary support for a strong association between gratitude and quality of life in adolescents. There is a need for more research on the level of agreement between parent and self-report gratitude.

APPENDIX

Table 1. Demographic Information

Factor	% Total sample	Mean	SD
Gender			
n	52		
% Male	59.6		
% Female	40.4		
Race			
n	52		
% White	67.3		
% Hispanic	15.4		
% Black	7.7		
% Mixed Race	5.7		
% Other	3.8		
Age			
n	52	17.33	1.23
15	15.4		
16	9.6		
17	9.6		
18	57.7		
19	7.7		
Education of Parent			
n	52		
Some high school or less	15.4		
High school diploma or GED	15.4		
Vocation school or some college	19.3		
College degree	32.7		
Professional or graduate degree	17.3		

Table 2. Correlations Between GQ – 6 Self Report and PedsQL and Subscales

Measure	1	2	3	4	5	6
1. GQ – 6 Student Report	—					
2. Total Score PedsQL	.503**	—				
3. PedsQL – Physical Scale	.429*	.832**	—			
4. PedsQL – Mental Functioning	.411*	.827**	.549**	—		
5. PedsQL – Social Functioning	.440*	.819**	.620**	.560**	—	
6. PedsQL – School Functioning	.391*	.841**	.664**	.599**	.526**	—

* $p < .005$

** $p < .001$

REFERENCES

- Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion, 8*, 425-429. doi: 10.1037/1528-3542.8.3.425
- Bar-Tal, D., Bar-Zohar, Y., Greenberg, M. S., & Hermon, M. (1977). Reciprocity behavior in the relationship between donor and recipient and between harm-doer and victim. *Sociometry, 40*, 293-298. doi: 10.2307/3033537
- Baumsteiger, R., Mangan, S., Bronk, K. C., & Bono, G. (2019). An integrative intervention for cultivating gratitude among adolescents and young adults. *The Journal of Positive Psychology, 14*, 807-819. doi: 10.1037/t73457-000
- Camfield, L., & Skevington, S. M. (2008). On subjective well-being and quality of life. *Journal of Health Psychology, 13*, 764-775. doi: 10.1177/1359105308093860
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin, 122*, 5-37. doi: 10.1037/0033-2909.122.1.5
- Chen, J., Zembrak, B., Embry, L., Freyer, D. R., Aguilar, C., & Cole, S. (2020). Profiles of emotional distress and growth among adolescents and young adults with cancer: A longitudinal study. *Health Psychology, 39*, 1-11. doi: 10.1037/hea0000843
- Freitas, L. B. L., Merçon-Vargas, E. A., Palhares, F., & Tudge, J. R. H. (2019). Assessing variations in the expression of gratitude in youth: A three-cohort replication in southern Brazil. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 18*, 1-10. doi: 10.1007/s12144-019-00334-6
- Frisén, A., & Bjarnedlind, S. (2010). Health-related quality of life and bullying in adolescence. *Acta Paediatrica, 99*, 597-603. doi: 10.1111/j.1651-2227.2009.01664.x
- Fritz, M. M., Armenta, C. N., Walsh, L. C., & Lyubomirsky, S. (2019). Gratitude facilitates healthy eating behavior in adolescents and young adults. *Journal of Experimental Social Psychology, 81*, 4-14. doi: 10.1016/j.jesp.2018.08.011
- Froh, J. J., Fan, J., Emmons, R. A., Bono, G., Huebner, E. S., & Watkins, P. (2011). Measuring gratitude in youth: Assessing the psychometric properties of adult gratitude scales in children and adolescents. *Psychological Assessment, 23*, 311-324. doi: 10.1037/a0021590

- Froh, J. J., Kashdan, T. B., Ozimkowski, K. M., & Miller, N. (2009). Who benefits the most from a gratitude intervention in children and adolescents? Examining positive affect as a moderator. *The Journal of Positive Psychology, 4*, 408-422. doi: 10.1037/t00944-000
- Froh, J. J., Yurkewicz, C., & Kashdan, T. B. (2009). Gratitude and subjective well-being in early adolescence: Examining gender differences. *Journal of Adolescence, 32*, 633-650. doi: 10.1037/t34941-000
- Goldbeck, L., Schmitz, T. G., Besier, T., Herschback, P., & Henrich, G. (2007). Life satisfaction decreases during adolescence. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation, 16*, 969-979. doi: 10.1007/s11136-007-9205-5
- Hill, P. L., Allemand, M., & Roberts, B. W. (2013) Examining the pathways between gratitude and self-rated physical health across adulthood. *Personality and Individual Differences, 54*, 92-96. doi: 10.1016/j.paid.2012.08.011
- Hoy, B. D., Suldo, S. M., & Mendez, L. R. (2013). Links between parents' and children's levels of gratitude, life satisfaction and hope. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 14*, 1343-1361. doi: 10.1007/s10902-012-9386-7
- Jiang, Y., Ren, Y., Zhu, J., & You, J. (2020). Gratitude and hope relate to adolescent nonsuicidal self-injury: Mediation through self-compassion and family and school experiences. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*. doi: 10.1007/s12144-020-00624-4
- Kwok, S. Y. C. L., Gu, M., Cheung, A. (2019). A longitudinal study on the relationship among childhood emotional abuse, gratitude, and suicidal ideation of Chinese adolescents. *Child Abuse & Neglect, 94*. doi: 10.1016/j.chiabu.2019.104031
- Li, D., Zhang, W., Li, X., Li, N., & Ye, B. (2012). Gratitude and suicidal ideation and suicide attempts among Chinese Adolescents: Direct, mediated, and moderated effects. *Journal of Adolescence, 35*, 55-66. doi: j.adolescence.2011.06.005
- Ma, M., Kibler, J. L., & Sly, K. (2013). Gratitude is associated with greater levels of protective factors and lower levels of risks in African American adolescents. *Journal of Adolescence, 36*, 983-991. doi: j.adolescence.2013.07.012
- Ma, Z., Zeng, W., Ye, K. (2015). Gender differences in Chinese adolescents' subjective well-being: The mediating role of self-efficacy. *Psychological Reports, 116*, 311-321. doi: 10.2466/17.07.PR0.116k15w2

- McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*, 112-127. doi: 10.1037/0022-3514.82.1.112
- O'Brien, L., Mendonça, S. E., & Price, U. Z. (2018). The development of gratitude in the United States. *The Journal of Comparative Social Science, 52*, 58-72. doi: 10.1177/1069397117737053
- Ponizovsky, A. M., Grinshpoon, A., Levav, I., & Ritsner, M. S. (2003). Life satisfaction and suicidal attempts among persons with schizophrenia. *Comprehensive Psychiatry, 44*(6), 442–447. doi: 10.1016/S0010-440X(03)00146-9
- Ramirez, E., Ortega, A. R., Chamorro, A., & Colmenero, J. M. (2014). A program of positive intervention in the elderly: Memories, gratitude, and forgiveness. *Aging & Mental Health, 18*, 463-470. doi: 10.1080/13607863.2013.856858
- Rotkirch, A., Lyons, M., David-Barrett, T., & Jokela, M. (2014). Gratitude for help among friends and siblings. *Evolutionary Psychology, 12*, 673-686. doi: 10.1177/147470491401200401
- Smedema, S. M. (2020). An analysis of the relationship of character strengths and quality of life in persons with multiple sclerosis. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care & Rehabilitation*. doi: 10.1007/s11136-019-02397-1
- The WHOQOL Group. (1995). The World Health Organization Quality of Life Assessment (WHOQOL): Position paper from the World Health Organization. *Social Science and Medicine, 41*, 1403–1409.
- Tian, L., Pi, L., Huebner, E. S., & Du, M. (2016). Gratitude and adolescents' subjective well-being in school: The multiple mediating roles of basic psychological needs satisfaction at school. *Frontiers in Psychology, 7*.
- Tsang, J.-A. (2006). Gratitude and prosocial behavior: An experimental test of gratitude. *Cognition and Emotion, 20*, 138-148. doi: 10.1080/02699930500172341
- Valikhani, A., Ahmadnia, F., Karimi, A., & Mills, P. J. (2019). The relationship between dispositional gratitude and quality of life: The mediating role of perceive stress and mental health. *Personality and Individual Differences, 141*, 40-46. doi: 10.1016/j.paid.2018.12.014
- Varni, J. W., Seid, M., Kurtin, P.S. (2001). The PedsQL 4.0: reliability and validity of the Pediatric Quality of Life Inventory version 4.0 generic core scales in healthy and patient populations. *Med Care, 39*, 800-812. doi: 10.1097/00005650-200108000-00006

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology, 30*, 890-905. doi: 10.1016/j.cpr.2010.03.005

Wood, A. M., Maltby, J., Gillett, R., Linley, P. A., & Joseph, S. (2008). The role of gratitude in the development of social support, stress, and depression: Two longitudinal studies. *Journal of Research in Personality, 42*, 854-871. doi: 10.1016/j.jrp.2007.11.003

Yen, S., Ranney, M. L., Tezanos, K. M., Chuong, A., Kahler, C. W., Solomon, J. B., & Spirito, A. (2019). Skills to enhance positivity in suicidal adolescents: Results from an open development trial. *Behavior Modification, 43*, 202-221.