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When does dispositional gratitude help athletes move away from experiential avoidance? The moderating role of perceived autonomy support from coaches

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Abstract

Experiential avoidance, the attempt to avoid negative experiences, can prevent athletes from reaching their goals. To mitigate this tendency, the authors offer a relational approach and propose that dispositional gratitude and perceived autonomy support from coaches will have an interaction effect in mitigating experiential avoidance. Time-lagged data from 140 athletes were analyzed. Dispositional gratitude and perceived coach autonomy support had a significant interaction effect on predicting experiential avoidance when Time 1 experiential avoidance was controlled. Those high in dispositional gratitude and perceived coach autonomy support decreased their experiential avoidance over time. Implications and application for experiential avoidance and gratitude are discussed.

Keywords: gratitude, experiential avoidance, autonomy, support, coaches

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In order to achieve better performance, athletes need to train intensively to enhance their physical and psychological strength. As the process is psychologically challenging and physically uncomfortable due to inevitable physical pain and psychological stress (Gagné & Blanchard, 2007), athletes need to overcome experiential avoidance which refers to an attempt to escape, avoid, or modify the forms or frequency of uncomfortable experiences, such as negative thoughts (e.g., "I might fail in this game"), unpleasant emotions (e.g., anxiety when facing a highly skillful competitor), and bodily sensations (e.g., tremors), in order to achieve their goals (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Mitigating experiential avoidance is important for athletes because it can lead individuals to take actions that deviate from their goals (Hayes et al., 1996), such as practicing less or devoting less effort to the sport, and thus bringing negative consequences to their performance and well-being (Bond et al., 2011).

Birrer, Röthlin, and Morgan (2012) and Gardner and Moore (2012) indicated that a mindfulness-based intervention can help reduce experiential avoidance in athletes. This is because mindfulness emphasizes non-judgmental awareness that encourages the acceptance of one's internal state. Nevertheless, in addition to the cognitive approach via a mindfulness-based intervention, it is also possible to mitigate experiential avoidance via a relational approach. As being supported by others has been theorized and found to help individuals confront negative feelings and be resilient (Bowlby, 1988), we suggest that athletes will reduce experiential avoidance when they perceive and appreciate support from others. This relational approach is different from the mindfulness-based approach or acceptance and commitment therapy (Hayes, Pistorello, & Levin, 2012), which relies on an individual's non-judgmental awareness, because it

emphasizes that an individual has to cope with and thus embrace negative experiences. Empirically, in a longitudinal study conducted over six years focusing on the parenting environments of children with a mean age of 12, Williams, Ciarrochi, and Heaven (2012) indicated that parenting behavior characterized by lower levels of warmth and high control results in higher experiential avoidance, while parenting behavior characterized by acceptance, responsiveness, and the flexible discussion of rules leads to lower experiential avoidance over time. Their finding suggests that mitigating experiential avoidance via a relational approach is possible. Therefore, the aim of this study is to examine the use of a relational approach for supporting athletes to mitigate their experiential avoidance.

In this study, we specifically examined an interaction effect between athletes' dispositional gratitude and perceived autonomy support from coaches in predicting changes in experiential avoidance. As we will elaborate shortly, we propose that in order to feel supported and to embrace support, athletes should first have a tendency to see and appreciate the care and help provided by others, represented by one's dispositional gratitude or a "general tendency to recognize and respond with grateful emotion to the roles of other people's benevolence in the positive experiences and outcomes that one obtains" (McCullough, Emmons, & Tsang, 2002, p. 112). Then, when grateful athletes do perceive support from others, they are more likely to embrace the support and utilize the resources to face negative experiences. In other words, we suggest that only athletes who have higher dispositional gratitude and also perceive support from others are more likely to have a strong sense of support to help them overcome experiential avoidance. As coaches play an important role in athletes' training and career development, we focused on coaches' autonomy support in this study. To test our hypothesis, we assessed athletes' experiential avoidance at two times within a five-month interval, and we examined the

interaction effect of dispositional gratitude and perceived coaches' autonomy support in predicting athletes' changes in experiential avoidance. Below, we provide arguments to support our hypotheses.

Hypothesis development

The importance of gratitude in athletes' lives has been recognized. For example, Carl Lewis, a track and field athlete, mentioned that showing gratitude toward his competitors is a part of his competition repertoire (Lewis & Marx, 1990). Research on gratitude in athletes has indicated that those who are high in dispositional gratitude and trust their coaches tend to have higher self-esteem (Chen & Wu, 2014), perceive higher social support from coaches and teammates, and have better subjective well-being (Chen, 2013). In addition, grateful athletes are more satisfied with life because they perceive their teammates' coherence (Chen, Kee, & Chen, 2015).

Here, we argue that dispositional gratitude helps athletes decrease their experiential avoidance, especially when they perceive higher support from others. First, as those higher in dispositional gratitude are more attentive to the benefits provided by others (Chen, 2013; Wood, Maltby, Gillett, Linley, & Joseph, 2008), they are more likely to use resources or support from others to overcome negative experiences when approaching their goals. For example, in a nationwide longitudinal study, grateful individuals were found to cope better with financial strain than others (Krause, 2009), which could be due to their ability to use available resources. Second, individuals higher in dispositional gratitude tend to see everything as a gift in their grateful worldviews (McCullough et al., 2002) and thus tend to see negative thoughts and unpressured emotions as an indication of the need for improvement and development. Similarly, Lambert, Graham, Fincham, and Stillman (2009) found that dispositional gratitude is significantly related

to positive reframing, a concept that refers to perceiving in a positive light something that was previously viewed as negative.

With these two main characteristics, when perceiving autonomy support from coaches, grateful athletes are more likely to rely on coaches' support to overcome negative experiences and to see those uncomfortable experiences as opportunities for development. We specifically focus on coaches' autonomy support, or "the attitude and practices of a person or a broader social context that facilitate the target individual's self-organization and self-regulation of actions and experience" (Ryan & Deci, 2008, p. 188), because autonomy support provides unconditional positive regard (Deci & Ryan, 1987; Ryan, Huta, & Deci, 2008) that allow athletes to rely on such support to overcome obstacles as they strive for goal achievement. In other words, by showing autonomy support, coaches can be regarded as secure attachment figures (Bowlby, 1988) who encourage athletes to explore and embrace experiences that can facilitate development.

Coaches' autonomy support is important for grateful athletes to reduce experiential avoidance because grateful athletes are more likely to embrace negative experiences when they can rely on coaches' support without pressure to fulfill specific requirements and worry about evaluative judgment from their coaches. Moreover, in such a supportive condition, grateful athletes tend to see themselves as beneficiaries of their coaches and thus feel affirmed, esteemed, and valued (McCullough et al., 2002), which helps them build their psychological strength and thus tolerate negative experiences in their pursuit of excellence. We do not expect grateful athletes to reduce their experiential avoidance if autonomy support from coaches is low because without perceiving support from coaches, it is unlikely that grateful athletes will build a sense of support and embrace negative experiences.

Based on the above reasoning, we focus on the change in experiential avoidance by using the residuals-as-change-scores approach in regression analysis (Cronbach & Furby, 1970). We propose that dispositional gratitude and perceived coaches' autonomy support will have an interaction effect in predicting experiential avoidance after controlling for the prior level of experiential avoidance. Specifically, we suggest that dispositional gratitude will only have a negative relationship with experiential avoidance after controlling for the prior level of experiential avoidance (i.e., change of experiential avoidance over time) when perceived coach autonomy support is high.

Method

Participants and Procedure

Two hundred and eight collegiate athletes participated in this study initially. Our research assistant approached their head coaches to ask for their permission to contact the athletes directly. Athletes read and signed the informed consent form, which explained their rights as study participants. Measurements were administered to the athletes before their practices; this was done in classrooms without the coach present. Their confidentiality and anonymity were ensured. They volunteered to participate in this study and were given NT$50 for returning each time.

A total of 140 athletes (77 male) provided complete data for this study. The mean age was 21.15 years (*SD* = 1.66; two athletes did not report their age), and the average years of experience with the particular sport was 9.73 (*SD* = 2.46). They were 33 handball players, 28 track and field athletes, 19 taekwondo athletes, 18 volleyball players, 11 basketball players, nine soccer players, eight tennis players, eight softball players, and six table tennis players. Athletes completed the gratitude questionnaire (independent variable) and experiential avoidance (dependent variable) at Time 1. Approximately five months later (Time 2), they were asked to

complete measurements assessing perceived coach autonomy support (moderator) and experiential avoidance again.

Measurements

Dispositional gratitude. In the current study, the Gratitude Questionnaire-Taiwan (GQ-T) was used to assess dispositional gratitude. This version was translated from the Gratitude Questionnaire (GQ; McCullough et al., 2002) and validated by Chen, Chen, Kee, and Tsai (2009). Sample items are "I have so much in life to be thankful for" and "If I had to list everything that I felt grateful for, it would be a very long list." Participants indicated their responses on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The original version of GQ has six items. Its validity was established by McCullough et al. (2002) with four studies. In the first study, they developed and selected six items for assessing gratitude in an exploratory factor analysis and validated the single factor structure in a confirmatory factor analysis. In terms of convergent and discriminant validity, GQ was positively associated with gratitude reported by informants and was also associated with but not equivalent to spirituality, positive affect, well-being, prosocial traits and behaviors and big-five personalities. The same results were replicated in a large nonstudent sample in their Study 2. Furthermore, GQ was negatively associated with envy and materialistic attitudes in Study 3. These associations were also obtained after controlling for neuroticism/negative affectivity, extraversion/positive affectivity, and agreeableness (Study 4). In terms of validity of the GQ-T, results of confirmatory factor analysis with two independent samples supported one factor structure but indicated that only five items have significant factor loadings. Therefore, only five items were used in the GQ-T. The GQ-T was positively correlated with, but not equivalent to, concepts such as happiness (r = 31, $p < .001$), optimism (r = 28, $p < .001$), agreeableness (r = 42, $p < .001$), and extraversion (r

= 11, $p < .01$), which is similar to McCullough et al.'s (2002) finding. To date, the GQ-T has been widely used in the general population (Lin, 2013; Loo, Tsai, Raylu, & Oei, 2014) and in athlete samples (Chen, 2013; Chen & Wu, 2014) in Taiwan.

Experiential avoidance. The seven-item Acceptance and Action Questionnaire-II (AAQ-II) developed by Bond et al. (2011) was used to measure athletes' experiential avoidance. Chang, Chi, Lin, and Ye (in press) validated the Chinese version of AAQ-II. First, confirmatory factor analysis was performed with 154 undergraduate students, with the original Item 6 eliminated because of poor factor loading. The remaining six items demonstrated a satisfactory fit, χ^2 (9) = 17.98, CFI = .98, NNFI = .96, RMSEA = .077, SRMR = .046. In addition, the test–retest reliability within a 10-month interval was high ($r = .65$, $p < .01$). Second, factor invariance was conducted and supported across an athlete sample ($N = 170$) and an undergraduate student sample ($N = 154$). Third, the nomological validity was examined with an athlete sample ($N = 76$). We found that AAQ-II scores significantly negatively correlated with positive emotion ($r = -.37$, $p < .001$). Moreover, the AAQ-II scores significantly related to negative emotion ($r = .67$, $p < .001$) and depression ($r = .70$, $p < .001$). The internal consistency was .81, .82, and .78 for the pilot studies, respectively. Overall, the reliability, factorial validity, factor invariance, and nomological validity of the AAQ-II across the athlete and student samples were supported. Sample items are "I'm afraid of my feelings" and "Emotions cause problems in my life." Participants indicated their responses on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Perceived coaches' autonomy support. The Sport Climate Questionnaire (SCQ) developed by Deci (2001) has been used to measure perceived autonomy support from coaches (Adie, Duda, & Ntoumanis, 2012; Jõesaar, Hein, & Hagger, 2012). The short version contains

six items (e.g., “I feel that my coach provides me choices and options” and "I feel understood by my coach") and was used to increase the response rate. In a previous study, Jõesaar et al. (2012) reported that the short version of SCQ satisfactorily predicted validity (Time 1 perceived coach autonomy support significantly predicted Time 2 task-involving after controlling for the Time 1 task-involving) and reliability (the Cronbach’s α was .80 at Time 1 and .81 at Time 2). Participants indicated their responses on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) in our study.

Results

The means, standard deviations, and correlations for the variables are presented in Table 1. Perceived coach autonomy support was positively related to gratitude ($r = .20$, $p < .05$). In addition, experiential avoidance at Time 1 was also positively correlated with experiential avoidance at Time 2 ($r = .61$, $p < .01$). In terms of change in experiential avoidance in the sample as a whole, the results of a paired-samples *t*-test indicated that experiential avoidance at Time 1 ($M = 3.75$, $SD = 1.21$) was not significantly different from experiential avoidance at Time 2 ($M = 3.83$, $SD = 1.05$) ($t = -.10$, *ns*). Therefore, athletes in our sample, as a whole, did not change their mean level of experiential avoidance over time. As our research focused on change in an athlete's experiential avoidance relative to other athletes, rather than on the mean-level change of the sample, the null finding on the mean-level change did not prevent us from performing analysis to test our hypothesis. For details about the different types of change, please refer to Caspi, Roberts, and Shiner (2005).

Because our research variables are all continuous variables, we created product terms of gratitude and perceived coach autonomy support and used these product terms to examine the interaction effect between gratitude and perceived autonomy support from coaches. This is an

appropriate and better approach than a dichotomous one (i.e., split sample into groups based on their scores on research variables) for testing an interaction effect of continuous variables (DeCoster, Iselin, & Gallucci, 2009; MacCallum, Zhang, Preacher, & Rucker, 2002). Dispositional gratitude and perceived coach autonomy support were standardized ((X-M)/SD) prior to the construction for the interaction terms (dispositional gratitude x perceived coach autonomy support). This standardization procedure prevents a multicollinearity problem resulting from a high correlation between the first-order terms and the interaction terms (Jaccard & Turrisi, 2003). Following the suggestion of Cohen, Cohen, West, and Aiken (2003), we conducted a series of regression analyses to examine the proposed interaction effect. Table 2 presents the results of these analyses.

In Model 1, experiential avoidance at Time 1 was first included to predict experiential avoidance at Time 2, and its effect was significant (b = .65, p < .001). When experiential avoidance at Time 1 was used to predict experiential avoidance at Time 2, the left variances that cannot be explained by experiential avoidance at Time 1 can be regarded as changes from Time 1 to Time 2. In Model 2, we additionally included the main effects of dispositional gratitude and perceived coaches' autonomy support and found that neither gratitude (b = -.07, *ns*) nor perceived coaches' autonomy support (b = .03, *ns*) significantly predicted experiential avoidance at Time 2 after controlling for the experiential avoidance at Time 1. In Model 3, we further included the interaction term between dispositional gratitude and perceived coaches' autonomy support. We found this interaction term to be significant (b = -.18, p < .05) and that it explained an additional 2% of the variance of experiential avoidance at Time 2 after controlling for experiential avoidance at Time 1.

Based on the suggestion of Aiken and West (1996), we presented an interaction plot in

Figure 1 by using one standard deviation above and below the means of perceived coaches' autonomy support and gratitude values to indicate higher and lower perceived coaches' autonomy support and gratitude levels. The results of simple slope analyses (Dawson & Richter, 2006) revealed that dispositional gratitude had a negative predictive effect on experiential avoidance at Time 2 when perceived coaches' autonomy support was high (one standard deviation above the mean; $b = -.29$, $p < .05$, $t = -2.36$), but it did not have a significant predictive effect when perceived coaches' autonomy support was low (one standard deviation below the mean; $b = .10$, *ns*, $t = .91$). This finding reveals that those high in dispositional gratitude decreased their experiential avoidance over time only when they perceived higher autonomy support from coaches.

Insert Table 1, Table 2, and Figure 1 here

Discussion

In this study, we offered a relational perspective on mitigating athletes' experiential avoidance over time and found that when perceiving higher autonomy support from coaches, grateful athletes decrease their tendencies of experiential avoidance over time. Our study brings several contributions. First, different from the mindfulness-based approach, we offer a relational perspective to understand how to mitigate athletes' experiential avoidance. Second, our study extends the scope of the psychological consequences of gratitude in athlete research. In contrast to previous research focusing on athletes' well-being, such as life satisfaction and burnout (Chen

& Kee, 2008), our examination suggests that gratitude brings a relational function in shaping one's willingness to appreciate and embrace negative experiences.

In other words, gratitude not only brings pleasant feelings (McCullough et al., 2002), such as higher life satisfaction, but also may help athletes see undesirable experiences in a positive light (Jia, Tong, & Lee, 2014; Lambert, Fincham, & Stillman, 2011). Finally, consistent with Chen and Wu (2014), we show that coaches play an important role in facilitating the beneficial effect of gratitude for athletes, suggesting that supportive coaches are crucial for grateful athletes to enjoy athletic lives. Below, we elaborate on these contributions and their implications.

A Relational Approach to Mitigate Experiential Avoidance

Our study extends previous research by investigating factors that help mitigate experiential avoidance over time. Experiential avoidance has been found to be detrimental to one's well-being (e.g., Panayiotou et al., 2015; Wilson, Wilhelm, & Hartmann, 2014), and in order to mitigate its negative impact, intervention studies have been conducted to understand how one can effectively deal with the negative consequences of experiential avoidance (Hann & McCracken, 2014; Swain, Hancock, Dixon, & Bowman, 2015). In contrast to this reactive approach, which aims to mitigate the link between experiential avoidance and its negative outcomes, we adopted a proactive approach to examine whether we can help individuals directly reduce their tendencies of experiential avoidance. In addition to the mindfulness-based intervention—a cognitive approach that has been found to be useful for mitigating experiential avoidance over time for athletes such as Birrer et al. (2012) and Gardner and Moore (2012)—our results support a relational approach to achieve the same goal. This relational approach encourages athletes to appreciate and rely on coaches' autonomy support to cope with and thus embrace negative experiences, which is different from the mindfulness-based approach that

encourages athletes to accept their internal states. Likewise, our proposed relational approach can also be regarded as a resource-based approach because if athletes have resources to cope with inevitable negative experiences for improvement, they are more likely to reduce attempts to escape, avoid, or modify the forms or frequency of uncomfortable experiences.

Psychological Consequence of Gratitude

By examining the effect of dispositional gratitude, our study also extends research on gratitude in athlete studies by advancing our understanding of the psychological consequences of gratitude. Dispositional gratitude has been linked to athletes' well-being, such as higher team satisfaction, life satisfaction, and lower burnout (Chen, 2013; Chen & Kee, 2008). In contrast to a direct focus on those well-being outcomes, the focus of this study on change in experiential avoidance suggests a psychological mechanism for explaining how dispositional gratitude can influence athletes' well-being, especially when support from others is available and perceived. As experiential avoidance has been theorized and found to influence one's well-being (e.g., Panayiotou et al., 2015; Wilson et al., 2014), it is likely that dispositional gratitude can have an influence on one's well-being via its function of shaping the tendency of experiential avoidance. In other words, our examination of experiential avoidance provides a different account for understanding the link between dispositional gratitude and athletes' well-being. Future studies are needed to empirically corroborate this idea.

The Moderating Role of Perceived Coach Autonomy Support

Finally, we found that dispositional gratitude did not have a main effect on mitigating experiential avoidance, suggesting that gratitude did not exert its effect on experiential avoidance independently. Yet, its significant interaction effect with perceived coaches' autonomy support highlights the phenomenon that perceived coaches' autonomy support is essential for evoking the

positive function of gratitude in mitigating experiential avoidance. This finding is similar to the results reported by Chen and Wu (2014). In a longitudinal study focusing on the growth of athletes' self-esteem over time, they found that dispositional gratitude did not have a main effect of enhancing athletes' self esteem but had significance when athletes had trustworthy relationships with their coaches. Both their studies and our research indicate the important role of coaches in facilitating the positive functions of gratitude for athletes.

Practical Implications

Our finding has practical implications for how to help athletes overcome a tendency of experiential avoidance. Current results of interaction specifically indicates that only for those high in dispositional gratitude, having perceived coaches' autonomy support can help them decrease experiential avoidance, This suggests that coaches should be aware that not all athletes will benefit from having autonomy support, and thus, they should know their athletes well in order to provide appropriate support. Moreover, coaches should be aware that autonomy support can help decrease experiential avoidance. In other words, coaches need to offer their support to facilitate athletes' autonomy, rather than providing support in a manner that may threaten athletes' sense of determination. As reported by Haerens, Aelterman, Vansteenkiste, Soenens, and Van Petegem (2015), providing support in a controlling manner can actually have a negative influence on individuals, such as by causing poor quality of motivation.

For those low in dispositional gratitude, our research did not inform how to help them overcome experiential avoidance. One approach that could be adopted, however, is to encourage those people more grateful so as to evoke a positive function of gratitude, with autonomy support, to mitigate experiential avoidance. The effectiveness of gratitude intervention has been demonstrated in previous studies. For example, Emmons and McCullough (2003) simply asked

participants to count their blessings in daily life to enhance the well-being of individuals suffering from chronic diseases. Nevertheless, whether this intervention approach is effective for athletes low in dispositional gratitude, and especially those exhibiting experiential avoidance, should be empirically examined. Another possibility is to explore whether those low in dispositional gratitude need different forms of support to overcome experiential avoidance. For example, providing support that can fulfill their need for relatedness may help them embrace negative experiences and overcome experiential avoidance, as they may need such support to feel that they will be well taken care of when encountering negative experiences. More studies are thus needed to understand how to help those low in dispositional gratitude overcome experiential avoidance.

Limitations and Conclusion

Despite making valuable contributions, our study also has several limitations. First, we only focused on coaches' support in this study. As previous studies have consistently reported the role of significant others in supporting athletes' positive development (e.g., Jõesaar et al., 2012; Jowett & Timson-Katchis, 2005), future studies are encouraged to examine whether and how family members can help athletes mitigate experiential avoidance. Second, the types of support can be extended. We only focused on autonomy support in this study and did not include support for competence or relatedness needs, which have been emphasized in self-determination theory, as basic human needs. Future studies can expand on the sources and dimensions of support to fully understand the role of support in shaping experiential avoidance. Third, the measures are all self-reported, which can bring common method bias (Lindell & Whitney, 2001) and result in an overestimation of the coefficients. Informant ratings can be used to overcome common method bias in the future. Nevertheless, common method bias should not threaten our findings because if

common method bias is stronger, it is unlikely to obtain an interaction effect between variables (Siemsen, Roth, & Oliveira, 2009). Fourth, we did not consider variables such as injury history, time in season, success, or failure experience in this study, as they may influence one's experiential avoidance and the function of coach support in facing negative events. These variables should be taken into account in future research. In addition, we only measured perceived coaches' autonomy support at Time 2 with the aim of mitigating common method variance so that participants could report having more coach support right after completing the gratitude questionnaire. However, athletes actually can change their perceptions of their coaches' autonomy support over time, and our research model did not fully consider such dynamics in a longitudinal process, which should be taken into account in the future. Moreover, we did not explore the issue of time in this study. Five months was used as the only interval to examine change in experiential avoidance, but there was no specific guidance for when this change would be more likely to occur. Therefore, more studies are required to examine the effect of time.

Finally, in this study, we focused only on how to decrease experiential avoidance. Although we did not have direct evidence to support the idea that experiential avoidance would result in meaningful and measurable behavior changes in sports, research has indicated that experiential avoidance was related to determinants that have been found to influence athletic performance, such as emotion regulation (De la cruz, et al., 2013), depressive symptoms (Panayiotou, et al., 2015), and coping strategies (Kashdan, et al., 2006). In other words, experiential avoidance may exert its effect on athletic performance via multiple pathways. More studies are required to empirically examine whether and how experiential avoidance can influence athletic performance and whether decreasing experiential avoidance can help improve athletic performance.

In conclusion, discomfort is inevitable for athletes on their paths to excellence. Those who cannot tolerate such inevitable negative experiences are more vulnerable in goal pursuit. To understand how to mitigate experiential avoidance in athletes or to make them embrace inevitable negative experiences, we examined the role of dispositional gratitude and perceived coaches' autonomy support in mitigating experiential avoidance over time, and we found that having higher gratitude and perceived coaches' autonomy support are critical factors in decreasing athletes' experiential avoidance.

References

Adie, J. W., Duda, J. L., & Ntoumanis, N. (2012). Perceived coach-autonomy support, basic need satisfaction and the well- and ill-being of elite youth soccer players: A longitudinal investigation. *Psychology of Sport and Exercise, 13*, 51-59. doi: org/10.1016/j.psychsport.2011.07.008

Aiken, L. S., & West, S. G. (1996). *Multiple regression: Testing and interpreting interaction*. Newbury Park, CA: Sage.

Birrer, D., Röthlin, P., & Morgan, G. (2012). Mindfulness to enhance athletic performance: Theoretical considerations and possible impact mechanisms. *Mindfulness, 3*, 235-246. doi:10.1007/s12671-012-0109-2

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., . . . Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676-688. doi:10.1016/j.beth.2011.03.007

Bowlby, J. (1988). *A secure base : Parent-child attachment and healthy human development*. New York: Basic Books.

Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology, 56*, 453-484.

Chang, W., Chi, L., Lin, S.-H., & Ye, Y.-C. (in press). Psychometric properties of the Acceptance and Action Questionnaire - II for Taiwanese college students and elite athletes. *Current Psychology*. doi:10.1007/s12144-015-9395-x

Chen, L. H. (2013). Gratitude and adolescent athletes' well-being: The multiple mediating roles of perceived social support from coaches and teammates. *Social Indicators Research, 114*, 273-285. doi:10.1007/s11205-012-0145-2

Chen, L. H., Chen, M.-Y., Kee, Y. H., & Tsai, Y.-M. (2009). Validation of the Gratitude Questionnaire (GQ) in Taiwanese undergraduate students. *Journal of Happiness Studies, 10*, 655-664. doi:10.1007/s10902-008-9112-7

Chen, L. H., & Kee, Y. H. (2008). Gratitude and adolescent athletes' well-being. *Social Indicators Research, 89*, 361-373. doi:10.1007/s11205-008-9237-4

Chen, L. H., Kee, Y. H., & Chen, M.-Y. (2015). Why grateful adolescent athletes are more satisfied with their life: The mediating role of perceived team cohesion. *Social Indicators Research, 124*, 463-476. doi:10.1007/s11205-014-0798-0

Chen, L. H., & Wu, C.-H. (2014). Gratitude enhances change in athletes' self-esteem: The moderating role of trust in coach. *Journal of Applied Sport Psychology, 26*, 349-362. doi:10.1080/10413200.2014.889255

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3 ed.): Hillsdale: Erlbaum.

Cronbach, L. J., & Furby, L. (1970). How we should measure "change": Or should we? *Psychological Bulletin, 74*, 68-80.

Dawson, J. F., & Richter, A. W. (2006). Probing three-way interactions in moderated multiple regression: Development and application of a slope difference test. *Journal of Applied Psychology, 91*, 917-926.

de la Cruz, L. F., Landau, D., Iervolino, A. C., Santo, S., Pertusa, A., Singh, S., & Mataix-Cols, D. (2013). Experiential avoidance and emotion regulation difficulties in hoarding disorder. *Journal of Anxiety Disorders, 27*, 204-209.

Deci, E. L. (2001). The sport climate questionnaire. Retrieved March 11, 2006 from. *http://www.psych.rochester.edu/SDT/measures/auton_sport.html.*

Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology, 53*, 1024-1037.

DeCoster, J., Iselin, A.-M. R., & Gallucci, M. (2009). A conceptual and empirical examination of justifications for dichotomization. *Psychological Methods, 14*, 349-366.

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*, 377-389. doi:10.1037/0022-3514.84.2.377

Gagné, M., & Blanchard, C. (2007). Self-determination theory and well-being in athletes. In M. S. Hagger & N. L. D. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in exercise and sport* (pp. 243-254). Champaign, IL: Human Kinetics.

Gardner, F. L., & Moore, Z. E. (2012). Mindfulness and acceptance models in sport psychology: A decade of basic and applied scientific advancements. *Canadian Psychology, 53*, 309-318. doi:10.1037/a0030220

Haerens, L., Aelterman, N., Vansteenkiste, M., Soenens, B., & Van Petegem, S. (2015). Do perceived autonomy-supportive and controlling teaching relate to physical education students' motivational experiences through unique pathways? Distinguishing between the bright and dark side of motivation. *Psychology of Sport and Exercise, 16*, 26-36. doi:org/10.1016/j.psychsport.2014.08.013

Hann, K. E. J., & McCracken, L. M. (2014). A systematic review of randomized controlled trials of Acceptance and Commitment Therapy for adults with chronic pain: Outcome domains, design quality, and efficacy. *Journal of Contextual Behavioral Science, 3*, 217-227. doi: org/10.1016/j.jcbs.2014.10.001

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012). Acceptance and Commitment Therapy as a unified model of behavior change. *Journal of Counseling Psychology, 40*, 976-1002. doi:10.1177/0011000012460836

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experimental avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168.

Jaccard, J., & Turrisi, R. (2003). *Interaction effects in multiple regression* (2nd ed.). Thousand Oaks, Calif.: Sage Publications.

Jia, L., Tong, E. M. W., & Lee, L. N. (2014). Psychological "Gel" to bind individuals' goal pursuit: Gratitude facilitates goal contagion. *Emotion, 14*, 748-760.

Jõesaar, H., Hein, V., & Hagger, M. S. (2012). Youth athletes' perception of autonomy support from the coach, peer motivational climate and intrinsic motivation in sport setting: One-year effects. *Psychology of Sport and Exercise, 13*, 257-262. doi: org/10.1016/j.psychsport.2011.12.001

Jowett, S., & Timson-Katchis, M. (2005). Social networks in sport: Parental influence on the coach-athlete relationship. *The Sport Psychologist, 19*, 267-287.

Kashdan, T. B., Barrios, V., Forsyth, J. P., & Steger, M. F. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy, 44*, 1301-1320.

Krause, N. (2009). Religious involvement, gratitude, and change in depressive symptoms over time. *International Journal for the Psychology of Religion, 19,* 155-172. doi:10.1080/10508610902880204

Lambert, N. M., Fincham, F. D., & Stillman, T. F. (2011). Gratitude and depressive symptoms: The role of positive reframing and positive emotion. *Cognition and Emotion, 26*, 615-633.

Lambert, N. M., Graham, S. M., Fincham, F. D., & Stillman, T. F. (2009). A changed perspective: How gratitude can affect sense of coherence through positive reframing. *The Journal of Positive Psychology, 4,* 461-470. doi:10.1080/17439760903157182

Lewis, C., & Marx, J. (1990). *Inside track: My professional life in amateur track and field*. New York: Simon and Schuster.

Lin, C.-C. (2013). A higher-order gratitude uniquely predicts subjective well-being: Incremental validity above the personality and a single gratitude. *Social Indicators Research, 119,* 909-924. doi:10.1007/s11205-013-0518-1

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology, 86,* 114-121.

Loo, J. M. Y., Tsai, J.-S., Raylu, N., & Oei, T. P. S. (2014). Gratitude, hope, mindfulness and personal-growth initiative: Buffers or risk factors for problem gambling? *PLoS ONE, 9*(2), e83889. doi:10.1371/journal.pone.0083889

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods, 7,* 19-40.

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. doi:10.1037//0022-3514.82.1.112

Panayiotou, G., Leonidou, C., Constantinou, E., Hart, J., Rinehart, K. L., Sy, J. T., & Björgvinsson, T. (2015). Do alexithymic individuals avoid their feelings? Experiential avoidance mediates the association between alexithymia, psychosomatic, and depressive symptoms in a community and a clinical sample. *Comprehensive Psychiatry, 56*, 206-216. doi:org/10.1016/j.comppsych.2014.09.006

Ryan, R. M., & Deci, E. L. (2008). A self-determination theory approach to psychotherapy: The motivational basis for effective change. *Canadian Psychology, 49*, 186-193.

Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of Happiness Studies, 9*, 139-170. doi:10.1007/s10902-006-9023-4

Siemsen, E., Roth, A., & Oliveira, P. (2009). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods, 13*, 456-476. doi:10.1177/1094428109351241

Swain, J., Hancock, K., Dixon, A., & Bowman, J. (2015). Acceptance and Commitment Therapy for children: A systematic review of intervention studies. *Journal of Contextual Behavioral Science*, 4, 73-82. doi:org/10.1016/j.jcbs.2015.02.001

Williams, K. E., Ciarrochi, J., & Heaven, P. C. L. (2012). Inflexible parents, inflexible kids: a 6-year longitudinal study of parenting style and the development of psychological flexibility in adolescents. *Journal of Youth and Adolescence, 41*, 1053-1066.

Wilson, A. C., Wilhelm, S., & Hartmann, A. S. (2014). Experiential avoidance in body dysmorphic disorder. *Body Image, 11*, 380-383. doi: org/10.1016/j.bodyim.2014.06.006

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

Table 1

Correlation Matrix for Research Constructs

		M	*SD*	α	1	2	3	4
1.	Dispositional gratitude	6.06	0.94	.83	1.00			
2.	Perceived coach autonomy support	4.40	1.41	.93	.20*	1.00		
3.	Experiential avoidance at Time 1	3.75	1.21	.82	-.08	.08	1.00	
4.	Experiential avoidance at Time 2	3.84	1.05	.78	-.11	.06	.61**	1.00

*$p < .05$; **$p < .01$

Table 2

Hierarchical Regression in Predicting Athletes' Experiential Avoidance at Time 2

	Experiential avoidance Time 2		
	Model 1	Model 2	Model 3
Constant	3.83	3.84	3.88
Experiential avoidance at Time 1	.65/61***	.64/.61***	.64/.60***
Dispositional gratitude		-.07/.07	-.09/-.08
Perceived Coach Autonomy support		.03/.03	.04/.04
Interaction term			-.18/-.15*
R^2	.38	.38	.40
F	83.44***	27.99***	22.79***
ΔF		.54	4.82*

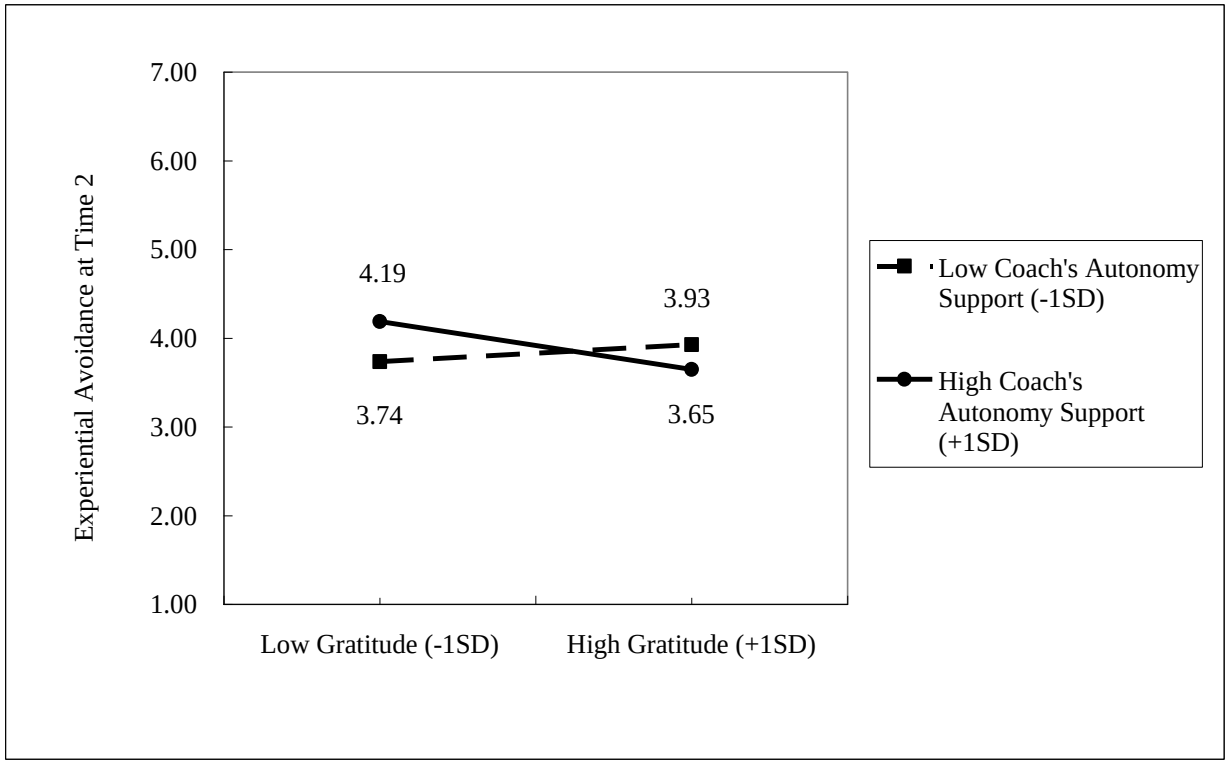
*$p < .05$; ***$p < .001$

Note: Unstandardized (left) and standardized regression coefficients are reported.

Figure Captions

Figure 1

Simple regression lines predicting change in experiential avoidance.


7.00
6.00
5.00
4.00
3.00
2.00
1.00
Experiential Avoidance at Time 2
4.19
3.93
3.74
3.65
Low Gratitude (-1SD)
High Gratitude (+1SD)
Low Coach's Autonomy Support (-1SD)
High Coach's Autonomy Support (+1SD)

16