

Dyadic Examination of Parental Support, Basic Needs Satisfaction, and Student–Athlete Development During Emerging Adulthood

Journal of Family Issues

1–24

© The Author(s) 2018

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/0192513X18806557

journals.sagepub.com/home/jfi



Miranda P. Kaye¹, Katie Lowe² ,
and Travis E. Dorsch³

Abstract

Using self-determination theory and the theory of emerging adulthood as frameworks, the present study investigated dyadic associations for the effect of parental support on college student–athletes' need satisfaction, and the effect of need satisfaction on student–athletes' adjustment. Fifty NCAA Division I student–athletes and a corresponding parent ($N = 50$) completed online surveys. Student–athletes' and parents reported parental support (i.e., parental responsiveness and basic needs satisfaction) and student–athletes' reported college adjustment (i.e., academic self-efficacy, athletic satisfaction, and individuation). Interpersonal models demonstrated both parent and student–athlete reported parental responsiveness was associated with higher levels of need satisfaction. Student–athlete reports of need satisfaction was related to reduced emotional independence, while parental reports of need satisfaction were related to enhanced academic self-efficacy. Findings support the central role of parental support for student–athletes

¹The Pennsylvania State University, State College, PA, USA

²Harvard University, Cambridge, MA, USA

³Utah State University, Logan, UT, USA

Corresponding Author:

Miranda P. Kaye, Clearinghouse for Military Family Readiness at Penn State, The Pennsylvania State University, 135 East Nittany Avenue, Suite 402, State College, PA 16801, USA.

Email: mpk180@psu.edu

in college; however, negotiating the balance between providing support and encouraging emotional independence remains a challenge for parents.

Keywords

self-determination theory, intercollegiate athletes, dyadic-modeling, parental support, emerging adulthood

A strong, emerging body of literature identifies parental support, being emotionally present and consistently dependable, as integral for promoting both positive changes in the parent–child relationship and adaptive developmental outcomes during the life stage of emerging adulthood and within the context of college (Arnett, 2015; Lowe & Dotterer, 2017; Nelson, Padilla-Walker, Christensen, Evans, & Carroll, 2011). However, little is known about the processes that may explain these associations, especially during emerging adulthood, despite theoretical propositions grounded in self-determination theory (SDT) that identify parental responsiveness (i.e., believing that a parent will respond supportively to expressions of need, and convey understanding, validation, and caring; Reis, Clark, & Holmes, 2004) and satisfaction of basic needs (i.e., autonomy, competence, and relatedness) as possible mechanisms of the influence of parents on children’s developmental and educational outcomes (Deci & Ryan, 1985; Grolnick & Ryan, 1989). Furthermore, with key exceptions (e.g., Dorsch, Lowe, Dotterer, & Lyons, 2016), little research has investigated links between parenting and college student–athletes, despite theoretical models articulating families as key sources of support across an athletes’ lifetime career (Côté, 1999; Côté, Baker, & Abernethy, 2007; Wylleman & Lavalée, 2004).

College athletes represent a unique group of emerging adults who must negotiate academic and athletic pursuits amid normative developmental changes, including renegotiation of the parent–child relationship. This developing relationship involves a transformation from a hierarchy to a more mutual, intimate bond in which parents reduce control and increase autonomy-granting (Aquilino, 2006; Arnett, 2015). During this transformation emerging adults shift from parental-dependence to self-dependence to attain a key developmental outcome called individuation, which is emotional and functional independence (Arnett, 2015; Hoffman, 1984). This process is even more complicated for student–athletes, who perceive great pressure to succeed athletically and academically (Wylleman & Lavalée, 2004) and who have reported lower levels of developmental assets, including sets of skills and relationships that enable positive development, than nonathletes (Hagen,

Calhoun, Porter, Schulman, & Smith, 2013). Student-athletes must negotiate these developmental tasks while fulfilling time demands in their athletic and academic careers (Wylleman & Lavallee, 2004). In addition, adjusting to a new team role, navigating team dynamics, and balancing academics with athletics, can further challenge their adjustment to college.

Because of parents' long-standing involvement in their college athletes' careers, student-athletes may experience difficulties with the parent-child relationship transformation during emerging adulthood, which may compromise student-athletes' adjustment to college. However, given the shortage of literature investigating associations between parenting and student-athletes' outcomes, research is warranted to better understand the processes that may explain the role of parental support (i.e., responsiveness) in student-athlete development during emerging adulthood. Thus, the overarching goal of the present study was to assess the effect of parental support on college student-athletes' need satisfaction, and the effect of need satisfaction on student-athletes' adjustment, specifically academic self-efficacy, athletic satisfaction, and individuation.

Basic Psychological Need Satisfaction

SDT (Deci & Ryan, 1985) has been applied to the study of emerging adulthood (i.e., identity formation and evaluation; Koepke & Denissen, 2012; Luyckx et al., 2008; Luyckx, Soenens, Goossens, & Vansteenkiste, 2007; Luyckx, Vansteenkiste, Goossens, & Duriez, 2009). It offers a parsimonious explanation of how parents facilitate or thwart student-athlete development. Basic psychological needs theory (BPNT), a subtheory of SDT, posits that people have needs for: (a) *autonomy*, having a sense of one's own volition and believing that it produces choices and decisions (Deci & Ryan, 1985); (b) *competence*, feeling effective in one's pursuits (Deci, 1975); and (c) *relatedness*, caring for and feeling cared for by others (Baumeister & Leary, 1995). Fulfilling these needs is essential for facilitating personal growth and development, personality integration, optimal functioning, social development, and personal well-being (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013). Furthermore, satisfying these needs both generally and within domains (e.g., academics, sport, and individuation) has consistently been linked with positive outcomes, including domain-specific and general well-being and psychological adjustment (Luyckx et al., 2009; Ryan & Deci, 2017).

Responsiveness. The SDT need framework offers insights into what it means for parents to be supportive or "responsive" and highlights the importance of the immediate social context (rather than individual differences) in the proximal

prediction of relational outcomes. Specifically, classic conceptualizations of responsiveness (e.g., Bretherton & Waters, 1985; Sroufe & Waters, 1977) can be differentiated with respect to the three needs (La Guardia & Patrick, 2008), such that responsive parents respond to youths' initiatives and encourage exploration (autonomy), they provide noncontingent positive regard for their child and a warm, loving, and nurturing environment (relatedness). Furthermore, need supportive parents help their student-athlete to not be overwhelmed but instead mobilize his or her resources to act, and thereby provide the necessary foundation from which the person may face challenges optimally (competence). Thus, student-athletes who perceive their parent as responsive should feel close, valued, listened to, and understood (e.g., Reis et al., 2004). From this perspective, responsive or supportive parents are essentially supporting basic needs for autonomy, competence, and relatedness, and facilitate establishing high-quality positive bonds. In contrast, controlling parents tend to have unreasonable expectations and be overchallenging or rejecting. These behaviors may detract from student-athlete's optimal functioning (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013).

Academics. One component of college success is academic self-efficacy, or the belief that one has the ability to be academically successful (Midgley et al., 2000). Competence-related self-perceptions have long been considered essential in achievement settings, and competence need satisfaction is related to academic achievement and engagement (Jang, Reeve, Ryan, & Kim, 2009). Relatedness has also been linked to student learning and achievement (Strage & Brandt, 1999). Furthermore, SDT postulates that the satisfaction of student's basic psychological needs is critical for academic success at every educational level (Niemic & Ryan, 2009). Clearly, need satisfaction is important for collegiate achievement; yet, aside from one study which found parental athletic and academic engagement positively predicted student-athletes' academic self-efficacy (Dorsch et al., 2016), the role of parents in supporting college student-athletes' need satisfaction to promote academic success is not fully understood.

Sport. Parents have important effects, distinct from that of coaches (e.g., Adie, Duda, & Ntoumanis, 2012), on youth sport performance anxiety, self-esteem, and autonomous motivation (Hein & Joesaar, 2015; O'Rourke, Smith, Smoll, & Cumming, 2014). For instance, Gaudreau et al. (2016) investigated the moderating role of parental autonomy support on links between coaches' autonomy support and sport-related outcomes in soccer and gymnast athletes aged 9 to 19 years. Results revealed that for each sport outcome, specifically, self-determined motivation, need satisfaction, goal

attainment, flow states, and achievement, the effect of coach autonomy support was not significant at high levels of parental autonomy support. In one of the few studies that assessed SDT dimensions beyond autonomy support, N. Williams, Whipp, Jackson, and Dimmock (2013) found that parents were important contributors to relatedness need satisfaction in college-aged female golfers. Beyond this, little is known about links among parenting, student–athlete need satisfaction, and sport performance outcomes at the intercollegiate level. Broader research is needed, especially since parents are noted as integral sources of support for athletes’ performance across their careers (Wylleman & Lavallee, 2004).

Individuation. As stated, a hallmark of emerging adulthood is the transition from parental-dependence to self-dependence individuation. The process of individuation is facilitated by parents’ adjustment of their involvement and control to suit emerging adults’ burgeoning emotional and functional independence (Lowe & Dotterer, 2017; Luyckx et al., 2009). However, controlling parenting during emerging adulthood has been associated with an anxious–indecisive orientation (Luyckx et al., 2008), higher levels of impulsivity and anxiety (Nelson et al., 2011), and lower levels of confidence in problem-solving abilities (Schiffrin et al., 2014). Accordingly, autonomy is the basic need most commonly associated with individuation and characteristics of independent functioning. For example, autonomy-supportive parenting has been associated with successful identity development formation in emerging adults (Luyckx et al., 2007; Schwartz, Côté, & Arnett, 2005), as well as other adaptive outcomes including self-worth, social acceptance, and kindness (Nelson et al., 2011). Autonomy-supportive parenting behaviors specific to the college years, including encouraging independent decisions related to choosing college courses, budgeting money, and managing roommate conflicts, has also been positively related to emerging adults’ satisfaction with university experiences (Pedersen, 2017). Conversely, high levels of parental involvement (e.g., daily contact, overinvolvement in sport-related decisions) among a sample of Division I athletes was found to negatively predict each variable indicating individuation, specifically emotional independence, functional independence, and attainment of criteria necessary for adulthood (Dorsch et al., 2016).

Beyond autonomy, relatedness has been linked to personal achievement and adjustment (Deci & Ryan, 2000) because the development of an increasingly differentiated, integrated, and mature sense of self depends on establishing satisfying interpersonal experiences (Blatt & Blass, 1996). Thus, parents’ support of autonomy and relatedness promotes integrative regulation of behaviors and emotions, an increased level of exploration, and a sense of

choice (Roth, Assor, Niemiec, Ryan, & Deci, 2009; Schwartz et al., 2005), that may motivate emerging adults to take advantage of their opportunities in college (Koeppke & Denissen, 2012). Because the ability to exercise autonomy within close relationships is one hallmark of emerging adulthood and an important aspect of healthy functioning in adult relationships (Collins, 2003; Taradash, Connolly, Pepler, Craig, & Costa, 2001), it follows that student-athletes must be able to confidently assert their own autonomy while preserving the closeness of the dyadic relationship with their parents. Thus, a better understanding of parenting, need satisfaction, and individuation is warranted with this unique group of emerging adults.

The Present Study

Given that BPNT suggest family relationships facilitate development to the extent that they promote need satisfaction via responsiveness (e.g., Deci & Ryan, 1985; Grolnick & Ryan, 1989; La Guardia & Patrick), the present study aimed to explore dyadic associations for the effect of parental support on college student-athletes' need satisfaction, and the effect of need satisfaction on student-athletes' adjustment. Grounded in the SDT and emerging adulthood literature documenting positive and developmentally appropriate aspects of parenting, we expected that supportive parents would actively attempt to understand student-athletes' perspectives (i.e., autonomy), provide reasonable expectations and structure (i.e., competence), and show interest in and direct energy toward their student-athlete, showing that he or she is significant regardless of academic or athletic performance (i.e., relatedness).

To date, no studies have examined both parent and college student-athlete reports of parental support and its links to key outcomes, including academic self-efficacy, athletic satisfaction, and individuation during emerging adulthood. Thus, the hypothesized sequence in Figure 1 for parental responsiveness, basic need satisfaction, and student-athlete outcomes has theoretical support but has not been empirically tested. Most research on need satisfaction in sport has used self-reports in which the athlete assesses the social climate. Jointly considering the roles of parents' support and student-athletes' perceptions of that support is necessary to understand the dyadic influence on student-athlete development. Thus, the present study aimed to assess these dyadic associations by garnering both student-athlete and parent reports of parental responsiveness and needs satisfaction.

Actor-partner interdependence models (APIM; Kenny & Ledermann, 2010) allow for the examination of the influence of a causal variable on both that individual (the actor effect) and on the dyadic partner (the partner effect). APIM has been used in studies of dyadic interactions between

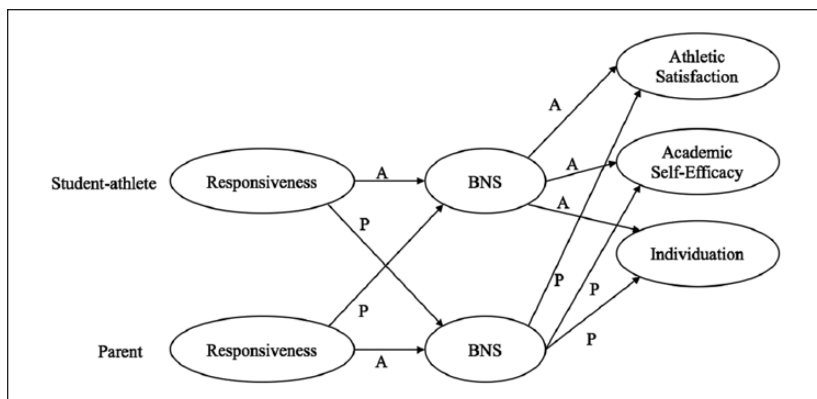


Figure 1. General model of proposed relationships.

Note. BNS = basic need satisfaction; A = actor-effect; P = partner-effect. “BNS” represents the composite of the three basic psychological needs (i.e., autonomy, competence, relatedness).

coaches and athletes, examining relational efficacy and relationship quality (Jackson, Grove, & Beauchamp, 2010) as well as parents’ and young athletes’ achievement motivation and precompetitive anxiety (Kaye, Frith, & Vosloo, 2015). The purpose of the present study is to examine dyadic associations for the effect of parental responsiveness on student–athletes’ need satisfaction (for autonomy, competence, and relatedness), and the effect of need satisfaction on student–athletes’ academic self-efficacy, athletic satisfaction, and individuation (i.e., emotional and functional independence), as detailed in Figure 1.

Given previous findings that individuals who perceive others as responsive feel valued, listened to, and understood (La Guardia & Patrick, 2008; Reis et al., 2004; Vansteenkiste & Ryan, 2013), we hypothesized that

Hypothesis 1: Both student–athletes’ perceptions of parental responsiveness and parents’ reported responsiveness are associated with student–athletes’ perceptions of need satisfaction.

Hypothesis 2: Parents’ provision of and student–athletes’ perceptions of need satisfaction are associated with athletic satisfaction and academic efficacy’ perceptions.

Hypothesis 3: Student–athletes’ perceptions of basic need satisfaction, along with parents’ provision of need satisfaction may be associated with individuation.

For each of these three hypotheses, actor (student–athlete to student–athlete and parent to parent) and partner (student–athlete to parent and vice versa) effects were expected.

Method

Participants and Procedures

Participants were 50 parent–child dyads, composed of NCAA Division I student–athletes ($n_{male} = 16$, $n_{female} = 34$) and one of their parents ($n_{male} = 18$; $n_{female} = 32$). Seven additional student–athletes participated, but were removed from the analysis because their parent did not consent to participate. In an analysis of survey responses, these student–athletes did not differ from the student–athletes in the final data set.

Student–Athletes. Student–athletes ranged in age from 18 to 23 years ($M = 19.27$; $SD = 1.48$). The majority were freshmen (52%; 12% sophomores; 16% juniors; 18% seniors; 2% graduate students), non-Hispanic (92%), and White (82%; 6% Black or African American; 4% multiracial; 2% American Indian/Alaskan Native; 2% Asian, 4% other). Men’s sports were baseball (6%), basketball (6%), cross-country and/or track and field, (31%), football (6%), ice hockey (13%), swimming or diving (19%), and wrestling (19%). Women’s sports were cross country or track and field (21%), gymnastics (9%), lacrosse (15%), soccer (9%), softball (9%), swimming or diving (12%), tennis (3%), triathlon (9%), volleyball (including beach volleyball, 12%), and water polo (6%). No student–athletes lived at home. Half (50%) were on at least partial athletic scholarships.

Subsequent to institutional review board approval, student–athletes were e-mailed a link to an online *Qualtrics* survey directly by the research team midway through the fall semester. Coaches were also asked to forward the survey link to their athletes. The invitation asked student–athletes to take part anonymously in an online survey aimed at understanding the role parents play in their lives. Respondents giving informed consent and completing at least 75% of the survey were entered into a random drawing to win a \$50 gift card. At the completion of the survey, student–athletes were asked to “think about the parent (e.g., mother, father, stepmother, stepfather, adoptive parent) who has the most influence (positive or negative) on you” and to provide that parent’s e-mail address.

Parents. Parents identified by the student–athlete were e-mailed the survey by the research team in the late fall semester. Parents were primarily mothers

(60%) and fathers (36%); one stepmother and one godmother also. Ages of these members of the parent–child dyad ranged from 42 to 68 years ($M = 52.42$, $SD = 5.06$), and most were non-Hispanic (94%) and White (86%; 8% Black or African American; 2% American Indian/Alaskan Native; 2% Asian; 2% other). The majority of parents had a college education (38% undergraduate degree only; 30% graduate or professional degree; 28% some college or an associate's degree; 4% high school education or GED only). Most parents (62%) reported paying for at least some ($\geq 25\%$) of their student–athlete's education.

Measures

In addition to demographics, the survey asked about parental responsiveness, need satisfaction, and student–athlete development. Student–athletes and parents completed the same measures of responsiveness and need satisfaction with items phrased for the appropriate respondent. Previous research (Kaye et al., 2015) demonstrated the utility of assessing parent–child perceptions of sport-related phenomena in this manner.

Parental Responsiveness. Three items were used from a modified Responsiveness Scale (Maisel & Gable, 2009) in which student–athletes responded to items such as “when I was sharing, my parent made me feel cared for” on a 5-point scale ranging from 1 (*not at all*) to 5 (*very much*). Parents responded to items such as “when he or she was sharing, I made him or her feel cared for.” Previous research has supported the internal reliability of the modified scale (Gosnell & Gable, 2013; Maisel & Gable, 2009).

Basic Psychological Needs. *Autonomy support* was assessed with seven items from the Health Care Climate Questionnaire (G. C. Williams, Grow, Freedman, Ryan, & Deci, 1996) adapted for sport (Adie et al., 2012). Student–athletes were asked to “indicate the degree to which your parent provided you with the following types of support” on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An example of these items is “My parent listened to how I would like to do things.” Parents were asked to “indicate the degree to which you provided your child who is a student–athlete the following types of support” on the same scale. An example item is “I listen to how he or she would like to do things.” Previous research supports the internal reliability and predictive validity of the adapted seven-item version of the Health Care Climate Questionnaire in the sport domain (Adie et al., 2012; Reinboth, Duda, & Ntoumanis, 2004).

The four-item Perceived Competence Scale was used to assess the degree to which student-athletes perceived that their parent supported *feelings of competence*, and the degree to which the parent reported supporting their emerging adult's competence. Student-athletes responded on a scale ranging from 1 (*not at all true*) to 7 (*very true*) to items such as "My parent helps me to feel capable," and parents responded to items such as "I help my child to feel capable" on the same 7-point scale.

Relatedness was assessed with the 10-item Need for Relatedness Scale (Richer & Vallerand, 1998), which measures the degree to which parents provide acceptance and intimacy. Student-athletes responded on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) to the stem "In my relationship with parent, I feel . . ." to items such as ". . . supported." Parents responded to the stem "in my relationship with my child who is a student-athlete, I . . ." to items such as ". . . supported him or her" on the same 7-point scale. The acceptance and intimacy subscales have satisfactory levels of internal reliability in research in the sport domain (Reinboth et al., 2004).

Academic Adjustment. Perceptions of *academic self-efficacy* were assessed with five items from the Academic Efficacy subscale of the Patterns of Adaptive Learning Scales (Midgley et al., 2000). On a scale ranging from 1 (*not at all true*) to 5 (*very true*) for items such as "I'm certain I can master the skills taught in my classes this year," student-athletes rated their beliefs about their abilities to be academically successful. The scale demonstrated acceptable internal reliability in past research (Dorsch et al., 2016).

Athletic Adjustment. The six-item Competition Satisfaction Scale (Lochbaum & Roberts, 1993) was used to assess student-athlete *satisfaction with their personal sport achievement*. Student-athletes rated items such as, "I am successful in sport" on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Individuation. Two components of individuation were assessed (Hoffman, 1984). To assess *emotional independence*, student-athletes responded to 17 items such as "I sometimes call home just to hear my parents' voices." To assess freedom from reliance on parental help with practical and personal affairs (*functional independence*), student-athletes responded to 13 items such as "I call my parent(s) whenever anything goes wrong." Responses were rated on a five-point scale ranging from 1 (*not at all true of me*) to 5 (*very true of me*). All items were reverse scored, so higher mean scores for each domain of individuation indicated greater levels of independence from parents.

Data Analysis

Dyadic family data are dependent, as family members are exposed to common influences (Kenny, 1996). Therefore, the interpersonal effects of parental responsiveness and need fulfillment on student–athlete outcomes were estimated using an extension of APIM which allows for the estimation of both individual and dyadic factors by retaining the individual unit measures and treating them as being nested within the dyad (Cook & Kenny, 2005). As detailed in Figure 1, the central components of APIM are the actor effects (represented by paths from parent to parent measures, and from student–athlete to student–athlete measures) and the partner effects (represented by paths from parent measures to student–athlete measures, and vice versa). We began by testing three models—one for autonomy, one for competence, and one for relatedness. These models each included parental responsiveness and student–athlete reported outcomes (i.e., academic self-efficacy, athletic satisfaction, emotional independence, and functional independence). The examination of separate models for each of the three needs enabled us to determine the influence of each of the basic needs in isolation. However, if the three dimensions are highly interrelated, it is important to examine them jointly (Markland & Tobin, 2010). Therefore, we conducted a final analysis with the three dimensions combined into an overarching category, labeled *need satisfaction*.

Models were tested using the robust maximum likelihood estimator procedure in *Mplus* 7.4 (Muthén & Muthén, 1998–2017). Maximum likelihood estimator provides standard errors and fit indices that are robust to the Likert nature of the items and nonnormality. Model fit was assessed using both absolute and incremental fit indices. Criteria for acceptable fit included $\chi^2/\text{degrees of freedom (df)} < 3.00$, standardized root mean square residual (SRMR) $< .10$, comparative fit index (CFI) and Tucker–Lewis index (TLI) $> .90$, and root mean square error of approximation (RMSEA) $< .08$, and criteria for excellent fit included, $\chi^2/\text{df} < 2.00$, SRMR $< .08$, CFI and TLI $> .95$, and RMSEA $< .06$ (Marsh, 2007).

Results

Descriptive Statistics

Descriptive statistics for the study variables are presented in Table 1. Athletes reported moderate to high levels on all variables, and parents reported high levels on all variables. Correlations between predictor and outcome variables depicted in Table 1 aligned with hypotheses; key findings included positive

Table 1. Correlations and Descriptive Statistics for Study Variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Resp_P	—													
2. Resp	.20	—												
3. Aut_P	.30*	.25†	—											
4. Aut	.03	.72***	.17	—										
5. Comp_P	.28†	.37**	.34*	.15	—									
6. Comp	.25†	.68***	.31*	.64***	.32*	—								
7. Relat_P	.47**	.39**	.63***	.30*	.56***	.50***	—							
8. Relat	.23	.81***	.21	.78***	.32*	.76***	.44**	—						
9. BNS_P	.43**	.41**	.79***	.26†	.76***	.47**	.91***	.41**	—					
10. BNS	.18	.82***	.24†	.91***	.29*	.85***	.44**	.95***	.41**	—				
11. Aca SE	.01	.25†	.33*	.29*	.30*	.33*	.34*	.30*	.39**	.33*	—			
12. Ath Sat	-.07	.26†	.10	.19	-.04	.34*	.15	.29*	.10	.29*	.22	—		
13. Em Ind	-.30*	-.61***	-.32*	-.44**	-.27†	-.46**	-.40**	-.60***	-.41**	-.32*	-.19	-.24†	—	
14. Fun Ind	-.04	-.21	-.27†	-.29*	-.25†	-.32*	-.27†	-.27†	-.32*	-.31*	-.17	.44**	—	
M	4.68	4.41	6.42	6.01	6.74	6.62	6.32	5.92	6.49	6.18	4.23	3.81	3.20	3.21
SD	0.34	0.69	0.53	0.91	0.51	0.58	0.67	1.06	0.47	0.78	0.71	0.75	0.75	0.80
Observed range	4.00-5.00	2.00-5.00	5.00-7.00	3.00-7.00	4.50-7.00	5.00-7.00	4.40-7.00	3.40-7.00	5.08-7.00	4.13-7.00	1.80-5.00	1.33-5.00	1.59-4.88	1.23-4.69
Cronbach's α	.56	.81	.75	.91	.90	.87	.91	.94	—	—	.88	.87	.89	.89

Note. P = parent report; Resp = responsiveness; Aut = autonomy; Comp = competence; Relat = relatedness; BNS = basic need satisfaction; Aca SE = academic self-efficacy; Ath Sat = athletic satisfaction; Em Ind = emotional independence; Fun Ind = functional independence.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2. Model Fit Indices.

Model	$\chi^2(df = 9)$	χ^2/df	RMSEA [90% CI]	CFI	TLI	SRMR
Autonomy	15.25†	1.69	.12 [.00, .22]	.91	.72	.06
Competence	17.57*	1.95	.14 [.03, .24]	.87	.62	.06
Relatedness	9.85	1.09	.04 [.00, .17]	.99	.97	.05
Need satisfaction	11.98	1.33	.08 [.00, .19]	.97	.91	.05

Note. *df* = degrees of freedom; RMSEA = root mean square error of approximation; CI = confidence interval; CFI = comparative fit index; TLI = Tucker–Lewis index; SRMR = standardized root mean square residual.

†*p* < .10. **p* < .05.

correlations between parents' and student-athletes' reports of autonomy, competence, and relatedness and student-athlete reports of academic adjustment.

Dyadic Models

Each of the models, described in the following sections, demonstrated acceptable to excellent fit (Table 2). Actor and partner effects for each model are presented in Table 3.

Autonomy. Large actor effects for parental responsiveness were reported by both student-athletes as well as small effects for parents. For each one-point increase in parental responsiveness as reported by student-athletes and parents, autonomy need satisfaction increased by .97 and .40 points, respectively. Small, positive, significant parental effects on student-athlete academic self-efficacy were also found for parental reported autonomy provision. Small to moderate, significant, negative actor and partner effects were observed for student-athlete reports of emotional independence, indicating that emotional independence decreased with autonomy need satisfaction, whether perceived or provided.

Competence. Large, positive, and significant actor effects were found for student-athletes' perception of parental responsiveness. Moderate, positive, and significant partner effects also were present, such that parents reported providing greater competence need satisfaction to their student-athlete when that student-athlete perceived higher levels of parental responsiveness. Moderate, positive, and significant actor effects were found for athletic satisfaction, whereas moderate, negative, and significant effects were found for emotional independence.

Table 3. Basic Psychological Need Models.

Outcome	Predictor	Actor			Partner			R ²
		<i>b</i>	<i>SE</i>	β	<i>b</i>	<i>SE</i>	β	
<i>Autonomy</i>								
Student–athlete	Resp	0.97	0.14	.72***	−0.29	0.27	−.11	.50***
Parent	Resp	0.40	0.21	.26*	0.15	0.11	.02	.13
Athletic satisfaction	Aut	0.12	0.12	.15	0.11	0.20	.08	.03
Academic self-efficacy	Aut	0.18	0.11	.22†	0.40	0.18	.29*	.16†
Emotional independence	Aut	−0.29	0.10	−.36***	−0.36	0.18	−.26*	.22*
Functional independence	Aut	−0.22	0.12	−.24†	−0.35	0.21	−.23†	.13
<i>Competence</i>								
Student–athlete	Resp	0.51	0.09	.62***	0.21	0.18	.13	.43***
Parent	Resp	0.33	0.20	.22†	0.25	0.10	.33***	.19†
Athletic satisfaction	Comp	0.47	0.19	.35***	−0.22	0.21	−.15	.12
Academic self-efficacy	Comp	0.32	0.18	.25†	0.31	0.20	.22	.14
Emotional independence	Comp	−0.46	0.18	−.35***	−0.23	0.20	−.16	.18†
Functional independence	Comp	−0.37	0.21	−.25†	−0.26	0.22	−.17	.11
<i>Relatedness</i>								
Student–athlete	Resp	1.20	0.14	.78***	0.25	0.27	.08	.63***
Parent	Resp	0.80	0.24	.41***	0.21	0.12	.31**	.31**
Athletic satisfaction	Rel	0.17	0.11	.23	0.06	0.17	.05	.06
Academic self-efficacy	Rel	0.12	0.10	.17	0.29	0.16	.27†	.13
Emotional independence	Rel	−0.34	0.09	−.49***	−0.21	0.14	−.19	.34***
Functional independence	Rel	−0.13	0.12	−.17	−0.24	0.18	−.20	.09

Note. Aut = autonomy; Comp = competence; Rel = relatedness; Resp = responsiveness; SE = standard error.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Relatedness. There were moderate to large, positive, and significant actor effects for student–athletes' perceptions of parental responsiveness on their sense of relatedness, as well as for parents' reports of responsiveness on their perception of meeting their student–athletes' need for relatedness. Small to moderate, positive, and significant partner effects were also found between student–athletes' perceptions of parental responsiveness and parents' perceptions of meeting relatedness needs. The same relationship was seen for parents' perception of meeting their student–athletes' need for relatedness. Partner effects for parents' provision of relatedness need satisfaction on student–athletes' academic self-efficacy approached significance. Finally, moderate, negative, and significant actor effects were found between student–athletes' relatedness need satisfaction and their emotional independence.

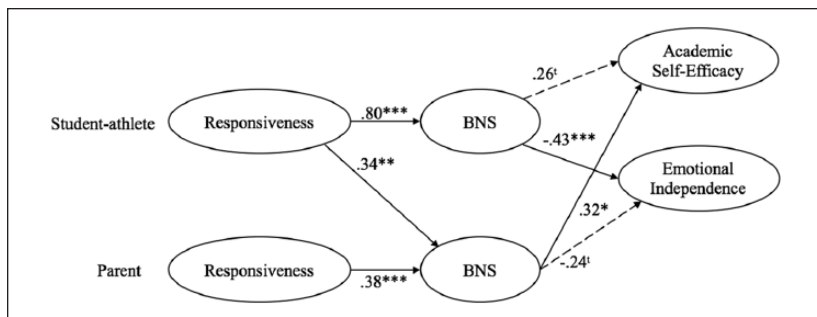


Figure 2. Empirical model of general need satisfaction.

Note. BNS = basic need satisfaction. “BNS” represents the average level of need satisfaction of the three basic needs (i.e., autonomy, competence, and relatedness) and only significant, standardized path estimates are included.

† $p < .10$. * $p < .05$. ** $p < .01$.

Need Satisfaction. In the omnibus model testing the average level of need satisfaction, actor effects were significant for student-athletes’ reports of parental responsiveness on need satisfaction (Figure 2). For every one-unit increase in student-athletes’ perceptions of parental responsiveness, need satisfaction increased by 0.80. Both actor and partner effects were significant for parents with respect to need satisfaction; for a one-unit increase in responsiveness provision, parents reported their overall need provision increased by 0.51, and for a one-unit increase in student-athletes’ perception of parental responsiveness, overall parental need provision increased by 0.24 units. Partner effects were significant for student-athletes on academic self-efficacy; a one-unit increase in parents’ provision of overall need satisfaction corresponded to a 0.48 increase in student-athletes’ academic self-efficacy. Actor effects were significant, and partner effects approached significance, for student-athletes on emotional independence; a one-unit increase in overall need satisfaction was associated with a 0.41 decrease in emotional independence. Need satisfaction was unrelated to functional independence.

Discussion

The theory of emerging adulthood acknowledges the role of parents in college student development and implies that maintaining connections during emerging adulthood poses challenges for renegotiating parental involvement (Arnett, 2015), yet empirical work has not clearly identified links between parent engagement and student outcomes, especially among NCAA student-athletes,

despite theoretical propositions grounded in self-determination theory that identify parental responsiveness and satisfaction of basic needs (i.e., autonomy, competence, and relatedness) as possible mechanisms (Ryan & Deci, 2017). In an initial attempt to address this gap, Dorsch et al. (2016) operationalized key parental involvement factors and identified links between parental involvement and student outcomes in NCAA Division I student-athletes. The present study extends that work by investigating links between parental support (i.e., parental responsiveness and basic need satisfaction) and student-athlete outcomes (i.e., academic self-efficacy, athletic satisfaction, and individuation) from both parent and student-athlete perspectives to clarify how parent support has a central role in NCAA college student-athlete development.

Parental Responsiveness and BPNT

In line with BPNT (Ryan & Deci, 2000) and in support of our first hypothesis, we found that student-athletes' perceptions of parental responsiveness were associated with higher levels of basic need satisfaction. Similarly, parents' reported level of responsiveness was associated with higher levels of basic need provision. These results complement past findings suggesting that the three basic needs are supported by parental responsiveness (Baumeister & Leary, 1995; Deci & Ryan, 1985; Grolnick & Ryan, 1989). Thus, it seems that responsive parents react to emerging adults' initiatives and encourage exploration by displaying noncontingent positive regard for their child, providing a warm, loving, and nurturing environment, and helping their child mobilize his or her resources to face challenges.

However, parents' reported responsiveness was unrelated to student-athletes' need satisfaction. Instead, student-athletes who reported higher levels of parental responsiveness had parents who reported higher levels of need provision. Effects in this direction imply reinforcement between the student-athletes' perception of supportive parenting and their belief that their parent responds supportively and conveys understanding, validation, and caring through the need support parents provide. In other words, student-athletes who perceive a supportive relationship with their parent also report having parents who actively attempt to understand their interests, preferences, and perspectives, provide clear, consistent, and reasonable expectations and structure, and show interest in, and direct energy toward their student-athlete. These supportive parenting behaviors demonstrate to the student-athlete that he or she is cared for regardless of academic or athletic performance. It may also be that parents of these student-athletes recognize the relationship they have with their student-athlete and provide support in response to this

positive relationship. This finding extends past research that found complementary support between increasing identity maturity of adolescents, and emerging adults and parents' recognition of their child's autonomy (Luyckx et al., 2007).

BPNT and College Adjustment

SDT postulates that the satisfaction of student's basic psychological needs is critical for academic success (Niemiec & Ryan, 2009). When looking at outcomes of the student-athletes' college adjustment, only parents' reports of providing need satisfaction were related to student-athletes' academic adjustment, partially supporting our second hypothesis. This was particularly true for autonomy when each of the three needs were examined separately, suggesting that when parents support their student-athlete in feeling effective as well as cared for, and provide their student-athlete with support to make their own choices and decisions, student-athletes believe they can succeed academically. Academic self-efficacy has been linked to academic performance in college students (Chemers, Hu, & Garcia, 2001), and parental support for academic success has been related to college grade point average (Fulton & Turner, 2008). Thus, findings from the present study complement past research and show promise for future intervention efforts, as research has found that college student-athletes from a range of divisions and sports experience academic difficulties due to a lack of time and energy associated with sport involvement (Fortes, Rodrigues, & Tchanchane, 2010; Lawrence, Harrison, & Stone, 2009).

Although past research has identified a link between parental athletic engagement and athletic satisfaction in NCAA Division I student-athletes (Dorsch et al., 2016), the present study suggests that the only effect of need satisfaction on athletic satisfaction was for student-athletes who perceived that their parent helped them feel capable or effective in their pursuits. From an applied perspective, this highlights the fact that parents' support of their student-athletes' competence is central to the student-athletes' perception of athletic success. Other sources, such as sport performance, athletic self-efficacy, and feedback from coaches or teammates may also be related to student-athletes' feelings of satisfaction and success in this domain (e.g., Jackson et al., 2010; O'Rourke et al., 2014).

BPNT and Individuation

Dorsch et al. (2016) found that parental support, contact, and athletic and academic engagement were negatively related to emotional independence.

Similarly, we found student–athletes’ perceptions of parental support for need satisfaction were associated with lower emotional independence. This was especially true for relatedness need satisfaction. On the other hand, parental support for need satisfaction was unrelated to student–athlete’s functional independence.

These findings reflect the nature of emerging adulthood. As Arnett (2015) argues, this transitional phase is characterized by increased individuation, but the full achievement of adult criteria is not typically completed until around 29 years of age. Thus, student–athletes’ connection to their parents is important as they navigate this developmental phase and gradually acquire autonomy, perhaps more so in terms of emotional than functional support. It has been argued that the process of individuation should take place in a context of ongoing parental support and involvement (Grotevant & Cooper, 1986; Koepke & Denissen, 2012). Therefore, instead of severing the ties with parents, achieving independence involves a transformation of the relationship with parents (Zimmer-Gembeck & Collins, 2003). Aspects such as joint decision making (Fuligni & Eccles, 1993) and a high-quality relationship (Bernier, Larose, & Whipple, 2005) have been consistently associated with more adaptive functioning and psychological well-being during adolescence and emerging adulthood. Additionally, maintaining relatedness to parents while exercising autonomy is a hallmark of emerging adulthood and an aspect of healthy functioning in adult relationships (Collins, 2003; Taradash et al., 2001).

In addition, leaving home for college can be regarded as an expression of individuation; however, college students are often considered semi-independent, living away from parents without yet taking full responsibility of independent living. Maintaining ties during this time provides positive resources for development, as parents can provide financial-, emotional-, and achievement-related support (Lowe & Dotterer, 2017; Zarrett & Eccles, 2006). This may be especially important for NCAA Division I student–athletes who perceive great pressure to succeed academically and athletically (Wylleman & Lavalley, 2004). The high demands on student–athletes place this group at a greater risk than nonathletes to experience mental health issues (Gill, 2008) and to engage in risky behavior (Faurie, Pontier, & Raymond, 2004). Dorsch et al. (2016) found that parental academic engagement negatively predicted depressive symptoms, and it could well be that feeling cared for and accepted by parents serves to alleviate some of this pressure.

Limitations

Despite its contributions, the present study possesses a number of limitations that should be acknowledged. First, because our findings stem from correlational data, we cannot draw strong conclusions about causality or the direction

of effects. Second, the sample only involves NCAA Division I student-athletes at one Southwestern university, and might represent a group with particularly good relationships with their parent. As such, findings might not apply to dyads at other universities across NCAA divisions. Third, most of the student sample were freshman. It is possible that the role of parents and links to adjustment outcomes shifts over the college career. Fourth, the sample was too small to examine variations that might differentiate patterns of associations, such as the gender grouping of dyads. Thus, future research could draw longitudinal data, from a larger, more diverse sample, across multiple institutions.

Beyond these aspects of our sample data, actor effects may have been inflated due to shared method variance (Shadish, Cook, & Cambell, 2002). While some method confounds were addressed by considering parent reports and by considering the relationship between emerging adults' perceptions and parents' perceptions, parents are likely to overstate the extent to which they satisfied their child's needs. This could cause range restriction and limit identifying the effect of the actual parenting strategies. Including coaches' reports on parents' involvement could shed light on this possibility. Similarly, a more comprehensive picture of the associations could be garnered by including the environment created by teammates and coaches.

Conclusions

This study underscores the importance of supportive parenting to a successful college experience and adjustment among NCAA Division I student-athletes. Responsiveness and basic need satisfaction are associated with positive adjustment to the college environment. To the extent the association is causal, practical advice for parents would include engaging in frequent and positive contact with student-athletes so as to respond to initiatives, encourage exploration, provide a nurturing environment, and help the emerging adult mobilize personal resources. Providing suitable support and emotional independence is a key challenge for parents of intercollegiate athletes, and parents may benefit from strategies that have the potential to enhance their involvement in developmentally appropriate ways.

Acknowledgment

We thank the NCAA student-athletes and their parents who took part in the research.

Authors' Note

Any opinions, findings and conclusions are those of the authors and do not necessarily reflect the views of the NCAA.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Research for this project was conducted with the support of the National Collegiate Athletic Association.

ORCID iD

Katie Lowe  <https://orcid.org/0000-0002-2729-5262>

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:10.1016/j.psychsport.2011.07.008
- Aquilino, W. S. (2006). Family relationships and support systems in emerging adulthood. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 193-217). Washington, DC: American Psychological Association.
- Arnett, J. J. (2015). *Emerging adulthood: The winding road from the late teens through the twenties* (2nd ed.). New York, NY: Oxford University Press.
- Baumeister, R., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Bernier, A., Larose, S., & Whipple, N. (2005). Leaving home for college: A potentially stressful event for adolescents with preoccupied attachment patterns. *Attachment & Human Development, 7*, 171-185.
- Blatt, S. J., & Blass, R. B. (1996). Relatedness and self-definition: A dialectic model of personality development. In G. G. Noam & K. W. Fischer (Eds.), *Development and vulnerability in relationships* (pp. 309-338). Mahwah, NJ: Lawrence Erlbaum.
- Bretherton, I., & Waters, E. (1985). Growing points of attachment theory and research. *Monographs of the Society for Research in Child Development, 50*(1-2), 209.
- Chemers, M. M., Hu, L.-t., Garcia, B. F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology, 93*, 55-64. <http://dx.dor.org/10.1037/0022-0663.93.1.55>
- Collins, W. A. (2003). More than myth: The developmental significance of romantic relationships during adolescence. *Journal of Research on Adolescence, 13*, 1-24.
- Cook, W. L., & Kenny, D. A. (2005). The actor-partner interdependence model: A model of bidirectional effects in developmental studies. *International Journal of Behavioral Development, 29*, 101-109. doi:10.1080/01650250444000405

- Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist*, 13, 395-417. doi:10.1123/tsp.13.4.395
- Côté, J., Baker, J., & Abernethy, B. (2007). Practice and play in the development of sport expertise. In R. Eklund & G. Tenenbaum (Eds.), *Handbook of sport psychology* (3rd ed., pp. 184-202). Hoboken, NJ: Wiley.
- Deci, E. L. (1975). *Intrinsic motivation*. New York, NY: Plenum Press.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum Press.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Dorsch, T. E., Lowe, K., Dotterer, A. M., & Lyons, L. (2016). Parent involvement in young adults’ intercollegiate athletic careers: Developmental considerations and applied recommendations. *Journal of Intercollegiate Sport*, 9, 1-26. doi:10.1123/jis.2015-0013
- Faurie, C., Pontier, D., & Raymond, M. (2004). Student athletes claim to have more sexual partners than other students. *Evolution & Human Behavior*, 25, 1-8. doi:10.1016/S1090-5138(03)00064-3
- Fortes, P. C., Rodrigues, G., & Tchantchane, A. (2010). Investigation of academic and athletic motivation on academic performance among university students. *International Proceedings of Economics Development and Research*, 2, 181-185.
- Fuligni, A. J., & Eccles, J. S. (1993). Perceived parent-child relationships and early adolescent’s orientation toward peers. *Developmental Psychology*, 29, 622-632.
- Fulton, E., & Turner, L. A. (2008). Students’ academic motivation: relations with parental warmth, autonomy granting, and supervision. *Educational Psychology*, 28, 521-534. doi:10.1080/01443410701846119
- Gaudreau, P., Morinville, A., Gareau, A., Verner-Filion, J., Green-Demers, I., & Franche, V. (2016). Autonomy support from parents and coaches: Synergistic or compensatory effects on sport-related outcomes of adolescent athletes? *Psychology of Sport and Exercise*, 25, 89-99. doi:10.1016/j.psychsport.2016.04.006
- Gill, E. L. (2008). Mental health in college athletics: It’s time for social work to get in the game. *Social Work*, 53, 85-88. doi:10.1093/sw/53.1.85
- Gosnell, C. L., & Gable, S. L. (2013). Attachment and capitalizing on positive events. *Attachment & Human Development*, 15, 281-302. doi:10.1080/14616734.2013.782655
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children’s self-regulation and competence in school. *Journal of Educational Psychology*, 18, 143-154.
- Grotevant, H. D., & Cooper, C. R. (1986). Individuation in family relationships: A perspective on individual differences in the development of identity and role-taking skills in adolescence. *Human Development*, 29, 82-100. doi:10.1159/000273025
- Hagen, J. W., Calhoun, B., Porter, B. J., Schulman, J., & Smith, C. E. (October, 2013). *Measuring success in college: A developmental assets approach*. Paper presented at the 6th biennial meeting of the Society for the Study of Emerging Adulthood Conference in Chicago, IL.

- Hein, V., & Joesaar, H. (2015). How perceived autonomy support from adults and peer motivational climate are related with self-determined motivation among young athletes. *International Journal of Sport and Exercise Psychology*, 13, 193-204. doi:10.1080/1612197X.2014.947304
- Hoffman, J. A. (1984). Psychological separation of late adolescents from their parents. *Journal of Counseling Psychology*, 31, 170-178. doi:10.1037/0022-0167.31.2.170
- Jackson, B., Grove, J. R., & Beauchamp, M. R. (2010). Relational efficacy beliefs and relationship quality within coach-athlete dyads. *Journal of Social and Personal Relationships*, 8, 1035-1050. doi:10.1177/0265407510378123
- Jang, H., Reeve, J., Ryan, R. M., & Kim, A. (2009). Can self-determination theory explain what underlies the productive, satisfying learning experiences of collectively oriented Korean students? *Journal of Educational Psychology*, 101, 644-661.
- Kaye, M. P., Frith, A., & Vosloo, J. (2015). Dyadic transmission in youth swimmers and their parents. *Journal of Applied Sport Psychology*, 27, 171-185. doi:10.1080/10413200.2014.970717
- Kenny, D. A. (1996). Models of non-independence in dyadic research. *Journal of Social and Personal Relationships*, 13, 279-294.
- Kenny, D. A., & Ledermann, T. (2010). Detecting, measuring, and testing dyadic patterns in the actor-partner interdependence model. *Journal of Family Psychology*, 24, 359-366. doi:10.1037/a0019651
- Koepke, S., & Denissen, J. J. A. (2012). Dynamics of identity development and separation-individuation in parent-child relationships during adolescence and emerging adulthood: A conceptual integration. *Developmental Review*, 32, 67-88.
- La Guardia, J. G., & Patrick, H. (2008). Self-determination theory as a fundamental theory of close relationships. *Canadian Psychology*, 49, 201-209. doi:10.1037/a0012760
- Lawrence, S. M., Harrison, C. K., & Stone, J. (2009). A day in the life of a male college athlete: A public perception and qualitative campus investigation. *Journal of Sport Management*, 23, 591-614.
- Lochbaum, M. R., & Roberts, G. C. (1993). Goal orientations and perceptions of the sport experience. *Journal of Sport & Exercise Psychology*, 15, 160-171.
- Lowe, K., & Dotterer, A. M. (2017). Parental involvement during the college transition: A review and suggestion for its conceptual definition. *Adolescent Research Review*, 3, 29-42. doi:10.1007/s40894-017-0058-z
- Luyckx, K., Schwartz, S., Berzonsky, M., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four dimensional model of identity formation in late adolescence. *Journal of Research in Personality*, 42, 58-82. doi:10.1016/j.jrp.2007.04.004
- Luyckx, K., Soenens, B., Goossens, L., & Vansteenkiste, M. (2007). Parenting, identity formation, and college adjustment: A mediation model with longitudinal data. *Identity*, 7, 309-330. doi:10.1080/15283480701600785

- Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: Bridging self-determination theory and process-oriented identity research. *Journal of Counseling Psychology, 56*, 276-288.
- Maisel, N. C., & Gable, S. L. (2009). The paradox of received social support: The importance of responsiveness. *Psychological Science, 20*, 928-932. doi:10.1111/j.1467-9280.2009.02388.x
- Markland, D., & Tobin, V. J. (2010). Need support and behavior regulations for exercise among exercise scheme clients: The mediating role of psychological need satisfaction. *Psychology of Sport and Exercise, 11*, 91-99. doi:10.1016/j.psychsport.2009.07.001
- Marsh, H. W. (2007). Application of confirmatory factor analysis and structural equation modeling in sport/exercise psychology. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 774-789). New York, NY: Wiley.
- Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Freeman, K. E., . . . Urdan, T. (2000). *Manual for the patterns of adaptive learning scales*. Ann Arbor: University of Michigan.
- Muthén, L. K., & Muthén, B. O. (1998-2017). Mplus user's guide (8th ed.). Los Angeles, CA: Muthén & Muthén.
- Nelson, L. J., Padilla-Walker, L. M., Christensen, K. J., Evans, C. A., & Carroll, J. S. (2011). Parenting in emerging adulthood: An examination of parenting clusters and correlates. *Journal of Youth and Adolescence, 40*, 730-743. doi:10.1007/s10964-010-9584-8
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*, 133-144. doi:10.1177/1477878509104318
- O'Rourke, D. J., Smith, R. E., Smoll, F. L., & Cumming, S. P. (2014). Relations of parent- and coach-initiated motivational climates to young athletes' self-esteem, performance, anxiety, and autonomous motivation: Who is more influential? *Journal of Applied Sport Psychology, 26*, 395-408. doi:10.1080/10413200.2014.907838
- Pedersen, D. E. (2017). Parental autonomy support and college student academic outcomes. *Journal of Child and Family Studies, 26*, 2589-2601. doi:10.1007/s10826-017-0750-4
- Reinboth, M., Duda, J. L., & Ntoumanis, N. (2004). Dimensions of coaching behavior, need satisfaction, and the psychological and physical welfare of young athletes. *Motivation and Emotion, 8*, 297-313.
- Reis, H. T., Clark, M. S., & Homes, J. G. (2004). Perceived partner responsiveness as an organizing construct in the study of intimacy and closeness. In D. Mashek & A. Aron (Eds.), *Handbook of intimacy and closeness* (pp. 201-225). Mahwah, NJ: Lawrence Erlbaum.
- Richer, S., & Vallerand, R. J. (1998). Construction and validation of the perceived relatedness scale. *Revue Européenne de Psychologie Appliquée, 48*, 129-137.
- Roth, G., Assor, A., Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The emotional and academic consequences of parental conditional regard: Comparing

- conditional positive regard, conditional negative regard, and autonomy support as parenting practices. *Developmental Psychology*, 45, 1119-1142. doi:10.1037/a0015272
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York, NY: Guilford Press.
- Schiffrin, H. H., Liss, M., Miles-McLean, H., Geary, K. A., Erchull, M. J., & Tashner, T. (2014). Helping or hovering? The effects of helicopter parenting on college students' well-being. *Journal of Child and Family Studies*, 23, 548-557. doi:10.1007/s10826-013-9716-3
- Schwartz, S. J., Côté, J. E., & Arnett, J. J. (2005). Identity and agency in emerging adulthood: Two developmental routes in the individualization process. *Youth & Society*, 37, 201-229.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin.
- Sroufe, L. A., & Waters, B. (1977). Attachment as an organizational construct. *Child Development*, 49, 1184-1199.
- Strage, A., & Brandt, T. S. (1999). Authoritative parenting and college students' academic adjustment and success. *Journal of Educational Psychology*, 91, 146-456.
- Taradash, A., Connolly, J., Pepler, D., Craig, W., & Costa, M. (2001). The interpersonal context of romantic autonomy in adolescence. *Journal of Adolescence*, 24, 365-377.
- Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration*, 23, 263-280. doi:10.1037/a0032359
- Williams, G. C., Grow, V. M., Freedman, Z. R., Ryan, R. M., & Deci, E. L. (1996). Motivational predictors of weight loss and weight-loss maintenance. *Journal of Personality and Social Psychology*, 70, 115-126.
- Williams, N., Whipp, P. R., Jackson, B., & Dimmock, J. A. (2013). Relatedness support and the retention of young female golfers. *Journal of Applied Sport Psychology*, 25, 412-430. doi:10.1080/10413200.2012.749311
- Wylleman, P., & Lavalley, D. (2004). A developmental perspective on transitions faced by athletes. In M. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 507-527). Morgantown, WV: Fitness Information Technology.
- Zarrett, N., & Eccles, J. (2006). The passage to adulthood: Challenges of late adolescence. *New Directions for Student Leadership*, 111, 13-28. doi:10.1002/yd.179
- Zimmer-Gembeck, M. J., & Collins, W. A. (2003). Autonomy development during adolescence. In G. R. Adams & M. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 175-204). Malden, MA: Blackwell.