

University Students' Subjective Well-being: The Role of Autonomy Support from Parents, Friends, and the Romantic Partner

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Abstract This study investigated the relations between perceived autonomy support from three significant sources (parents, friends, and the romantic partner) and university students' subjective well-being (SWB) using two approaches: a variable-centered and person-centered approach. Participants were 256 university students (191 women, 65 men) involved in a romantic relationship. Results from both approaches revealed that students' perception that significant individuals support their autonomy predicted higher levels of SWB. Furthermore, results from a person-centered approach suggested that students reported the highest levels of SWB when all sources were perceived to be highly autonomy supportive. Together, these findings support a sensitization process of need satisfaction. Implications for SWB and self-determination theory are discussed.

Keywords University students · Subjective well-being · Autonomy support · Parents · Friends · Romantic partner

1 Introduction

Subjective well-being (SWB) is a multidimensional concept that refers to individuals' levels of well-being, subjectively evaluated by their general satisfaction with their lives and important life domains, as well as their associated emotional states (Diener et al. 1999; Diener 2000; Diener and Ryan 2009). Research on happiness, which predominantly focuses on emotional states (e.g., positive affect, negative affect; see Diener et al. 1999; Ryan et al. 2008) can be conceptualized as falling under the global concept that is SWB. While SWB has been conceptualized as a transient as well as an enduring trait, studies on SWB, happiness, or quality of life have mainly focused on traits rather than on short-term fluctuations (Eid and Diener 2004). The present study is in line with the trait perspective on SWB and focused

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more specifically on university students. The importance of studying SWB stems from its ability to predict important positive individual and relational consequences (i.e., marital quality, income, productivity, etc.; Lyubomirsky et al. 2005). Decades of research have shown that individuals who reported higher levels of SWB were more social, altruistic, and active. They also liked themselves and others more, had stronger immune systems, and had better conflict resolution skills (Larsen and Eid 2008). Promoting individuals' SWB therefore appears to be of central importance for a variety of consequences.

In the context of higher education, SWB has also been associated with important outcomes such as educational aspirations, academic engagement, class attendance, educational track/choice of field of study, and academic achievement, and dropout (Chambel and Curren 2005; Cotton et al. 2002; Nickerson et al. 2011; Salmela-Aro and Tuominen-Soini 2010). Hence, promoting university students' SWB is an important outcome in itself, but it is also important academic and professional success. Given these findings, it becomes important to better understand the variables that promote university students' SWB. As research by Tay and Diener (2011) demonstrated, individuals' psychological needs are important sources of SWB. Our goal in this research was thus to examine the contribution of need satisfying behaviors from significant individuals to university students' SWB. Psychological need satisfaction, and more specifically need satisfying behaviors, will be examined from the stance of self-determination theory.

2 A Self-Determination Perspective on Subjective Well-being

Self-determination theory (SDT; Deci and Ryan 1985, 1991, 2002) proposes that individuals have three innate psychological needs whose satisfaction is essential for optimal functioning, natural growth tendency, internalization of values, and well-being (e.g., Deci et al. 1994; Deci and Ryan 2000; Ryan 1995; Ryan and Deci 2000). These are the need for autonomy (i.e., being choiceful and volitional, perceiving one's behaviors as originating from the self), competence (i.e., being able to produce important outcomes when interacting with one's environment), and relatedness (i.e., developing meaningful relations with significant others). Hence, to the extent that individuals' needs for autonomy, competence, and relatedness are met, they should experience SWB (e.g., Demir and Ozdemir 2010; Howell et al. 2011; also see Tay and Diener 2011).

According to SDT, these needs will be satisfied when individuals evolve in autonomy supportive interpersonal contexts (Deci and Ryan 1987). *Autonomy support* is defined as "the degree to which the environment allows individuals to feel that they initiate their actions, rather than they are being coerced" (Grolnick 2003, p. 13). In contrast, controlling interpersonal contexts that involve the use of power-assertive techniques, i.e. encouraging competition or imposing deadlines, that pressure individuals to comply will thwart psychological need satisfaction (Grolnick and Ryan 1989; Grolnick 2003). During the course of their education, university students experience stressful events such as deadlines for term papers, competition for admission to a selective program or for pursuing graduate studies, competition for scholarships and so on, that increase their feelings of being pressured and controlled (see Deci 2008, for a review). Hence, to the extent that significant individuals in students' lives support their autonomy in this context, we can expect that their need for autonomy will continue to be satisfied regardless of the academic pressures. We argue that the type of support being provided (autonomy supportive vs. controlling) will explain why some university students report being happy and satisfied and others don't. Research on SDT has showed that the mechanism underlying the positive

contribution of autonomy support to SWB is the satisfaction of students' psychological needs (Chirkov and Ryan 2001; Reis et al. 2000b; also see Deci and Ryan 2000).

2.1 Sources of Autonomy Support

During the course of their studies, university students will be exposed to individuals whose behaviors can satisfy or thwart their psychological needs. When examining the contribution of autonomy support to university students' SWB, it is important to distinguish between autonomy support from different, yet significant individuals such as parents, friends, and the romantic partner, because these relationships were found to serve distinctive functions in early adulthood. While parents are those whom young adults typically turn to for nurturance and support, friends or a romantic partner are those whom young adults turn to most often when they are feeling down. This differentiation plays an important role in socialization (Collins and Madsen 2006; Fraley and Davis 1997). We now examine how each source' autonomy supportive behaviors can be important for students' SWB.

2.1.1 *Autonomy Support from Parents*

Because parents play a significant role during their children's life transitions, from childhood to early adulthood, they're the ones whom young adults seek advice from and depend on (Fraley and Davis 1997). Studies showed that parental autonomy support is significantly and positively correlated with a variety of academic consequences such as academic adjustment, persistence, and achievement (Duchesne et al. 2007; Ratelle et al. 2005; see Guay et al. 2008), as well as students' SWB (Chirkov and Ryan 2001; Downie et al. 2007; Niemiec et al. 2006). Interestingly, these studies show that even as adults, students still benefit from having parents that support their autonomy with respect to their academic decisions and behaviors.

Whereas many studies have focused on support from teachers and parents to understand students' SWB (Chirkov and Ryan 2001; Downie et al. 2007), less attention has been dedicated to the role of support from other sources such as the romantic partner and friends. Research has showed that, upon entering adulthood, friends and romantic partners become increasingly important where they, for instance, occupy more leisure time than other sources (see Collins and Madsen 2006; Osgood and Lee 1993).

2.1.2 *Autonomy Support from Friends*

Even though parents play an important role in early adulthood, friends become increasingly important sources of support for emotional problems (Collins and Madsen 2006). Friends, who are perceived by young adults as the most important relationship outside the family (Brown 2004), contribute to students' adjustment during the transition to university (Dixon Rayle and Chung 2007; Shaver et al. 1985) and to well-being in general (Argyle 2001). Among the characteristics specific to friendship is the fact that it involves mutuality and equality, something that is not particular to hierarchical relations such as parent-child relationships. A study by Surjadi et al. (2011) surveyed late adolescents during their transition into adulthood and found that the contribution of parental support was gradually replaced by that of extra-familial partners (friends or romantic partner) in the prediction of mastery, a concept akin to competence. A similar process might also operate for autonomy and relatedness. Among the studies that specifically focused on autonomy support (e.g.,

Deci et al. 2006; Kasser and Ryan 1999), it was found that friends' contribution increased psychological well-being. To our knowledge, these are the only studies that have examined the relationship between autonomy support from friends and students' SWB. Moreover, whereas the first study did not compare friends' contributions with those of other individuals, the second did not target early adulthood. The present study incorporates these two elements (comparison of different relationships and targeting young adults).

2.1.3 *Autonomy Support from the Romantic Partner*

The contribution of romantic partners also needs to be considered, as the time spent with friends increasingly become allocated to the romantic partner in early adulthood (Gable et al. 2004; Reis et al. 1993). In fact, most young adults (nearly 70 %) report being involved in a romantic relationship (Collins 2003). They spend a lot of time with their romantic partner and, as a result their intimacy increases (Reis et al. 1993). Considering that the romantic relationship becomes the primary relationship in adulthood and is generally non-hierarchical, it is particularly interesting and important to focus on it during this period (Reis et al. 2000a). No study to our knowledge has evaluated the relationship between autonomy support from the romantic partner and university students' SWB. However, because the romantic partner can play a pivotal role in times of difficulty or stress (e.g., Gleason et al. 2003; Thompson and Bolger 1999), which is bound to be experienced by university students, it becomes important to examine the relative contribution of this relationship to students' SWB. Some studies did show that SWB is associated with characteristics of the romantic relationship such as relationship quality (Berry and Willingham 1997; Demir 2007; Khaleque 2004), motivation in the romantic relationship (Blais et al. 1990), emotional transmission, and supportive equity (Gleason et al. 2003; Thompson and Bolger 1999). If we consider that these relational variables contribute to SWB, we can hypothesize that similar findings will be obtained with autonomy support from the romantic partner.

Overall, our review of the literature on sources of autonomy support and SWB highlights the lack of research on romantic partners' autonomy supportive behaviors as well as on the combined contribution of autonomy support from parents, friends, and the romantic partner for university students' SWB. The present study can therefore provide an important contribution to the literatures on SDT and SWB by showing how significant individuals (i.e., parents, friends, and romantic partner) can have unique and possibly complementary contributions to university students' SWB.

3 A Person-Centered Versus Variable-Centered Approach

There are two approaches that can be used to examine the contribution of autonomy support to SWB. A *variable-centered approach* is one that examines predictive relations among variables of interest and typically uses statistical techniques such as multiple regression, factor analysis, or structural equation modeling. This approach is particularly suited for research questions addressing the relative contribution of a series of predictors to a specified outcome. In our case, a variable-centered approach would allow to test the relative contribution of autonomy support from parents, friends, and the romantic partner to university students' SWB. This is the most prevalent approach used in studies examining the contribution of autonomy support to variables such as SWB as well as in studies that specifically aim to identify the predictors of SWB.

In contrast, a *person-centered approach* is one that identifies groups of individuals who share some characteristics, using statistical techniques such as cluster analysis, mixture modeling, or latent class analysis. Such an approach is most appropriate for research questions that aim at identifying groups of individuals and the factors (predictors, outcomes) associated with group membership. In the present study, a person-centered approach would allow to identify groups of university students who perceived similar levels of autonomy support from parents, friends and the romantic partner and test in which cases SWB is highest. For instance, we could expect some students to perceive all sources as highly autonomy-supportive while another group would perceive all sources as providing little autonomy support. Still others could report that it is their parents that provide the most autonomy support. Using a person-centered approach to study autonomy support from important sources will allow us to test if all or only a limited number of sources need to be autonomy supportive for students to report high SWB.

According to a *sensitization model of need satisfaction* (i.e., need satisfaction prompts additional need satisfaction; see Moller 2007; Moller et al. 2010), all sources of autonomy support are important to foster SWB. In other words, SWB will be higher among students reporting being autonomy supported by their parents, friends, and romantic partner. In contrast, a *satiation model of need satisfaction* will posit that receiving it from at least one important source will be sufficient to promote high levels of SWB (i.e., need satisfaction decreases the value of additional need satisfaction; Baumeister and Leary 1995). Results from Laursen and Mooney (2008) showed that students' adjustment increased with the number of positive relationships (mother, father, and friends) they could rely on, which indirectly support a sensitization model of need satisfaction. While these findings were obtained with social support, we can expect similar findings with autonomy support. In sum, there has been no research to our knowledge that examined the contribution of different sources of autonomy support to university students' SWB (or other variables) using a person-centered approach. The present research will therefore provide a unique contribution to the literatures on SDT and SWB by testing the different configurations of need-satisfying relationships and their associated differences in terms of SWB. The resulting findings will also have implications for satiation and sensitization models of need satisfaction (Moller 2007; Moller et al. 2010).

The goal of the present study was to examine the contribution of autonomy support from parents, friends, and the romantic partner to students' SWB using variable-centered and person-centered approaches. It was hypothesized that autonomy support from all three sources would predict higher SWB. Given the exploratory nature of the study, we did not formulate hypotheses regarding which source of autonomy support would be most important or the additive effect they might have. However, in light of the findings of Laursen and Mooney (2008), which showed the additional value of each supportive relationship, we might expect the sensitization model of psychological need satisfaction to be supported (i.e., that SWB will be highest when all sources are highly autonomy supportive). We examined these relationships over and beyond the contribution of factors that have previously been associated with SWB. First, we controlled for gender and age, considering that past research has revealed differences between women and men as well as between youths and older adults in predicting SWB (Diener and McGavran 2008; Diener et al. 1999; Ryff and Keyes 1995). Second, we considered whether participants were cohabiting with their romantic partner because it usually entails greater relationship commitment (Kamp Dush and Amato 2005), a variable associated with SWB (Kamp Dush and Amato 2005). Finally, we controlled for academic achievement because of its previous association with SWB (e.g., Borrello 2005).

4 Method

4.1 Participants and Procedure

An email was sent to the student listsev at Laval University to invite all students to participate in the study. They were given 2 weeks to complete an online questionnaire, which included measures of perceived autonomy support from parents, friends, and the romantic partner, as well as SWB, and sociodemographic variables. A total of 477 students completed the questionnaire. Participants who completed the questionnaire were eligible to win one of 10 pairs of movie tickets.

Because the goal of this study was to assess the relative contributions to autonomy support from parents, friends, and the romantic partner in early adulthood, our analyses were conducted only on participants who were involved in a romantic relationship and whose age was between 19 and 28 years ($N = 256$; 54 % of the total sample). The average relationship length was 2 years and 9 months ($SD = 2.24$) and 46 % of participants lived with their romantic partner. Of the total sample, 75 % were women ($N = 191$) and 25 % were men ($N = 65$). Participants' mean age was 23 years ($SD = 2.55$); 93 % were born in the province of Quebec and 98 % reported French as their first language. Participants were enrolled in various academic programs: education (44 %), science and engineering (34 %), social sciences and humanities, arts and communications, and law (22 %). About 74 % of the participants were enrolled in an undergraduate program, 20 % in a masters' program, and 6 % in a doctoral program.

4.2 Measures

4.2.1 Perceived Autonomy Support

We assessed perceived autonomy support with the short form of the Learning Climate Questionnaire (LCQ; Williams and Deci 1996), which contains six items that can be adapted to specific learning environments such as a university. We formulated items to assess students' perceptions of the autonomy supportive behaviors of their parents (6 items), friends (6 items), and romantic partner (6 items). Participants had to indicate, using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree), the extent to which they agreed with each item. Examples of items include "With respect to my studies, I feel that my parents/friends/romantic partner provides me choices and options" and "With respect to my studies, I feel understood by my parents/friends/romantic partner". Cronbach alphas ranged from .84 (friends' autonomy support) to .89 (parental autonomy support).

4.2.2 Subjective Well-being

We operationalized the concept of SWB according to Diener's conceptualization (Diener et al. 1999, Diener 2000), i.e. through emotional responses, domain satisfactions, and global judgments of life satisfaction. Thus, we used the French-Canadian version (Blais et al. 1989) of the Satisfaction with Life Scale (SWLS; Diener et al. 1985) to assess *general satisfaction with one's life*. This 5-item scale, scored on a 7-point scale (1 = strongly disagree, 7 = strongly agree), included items such as, "I am satisfied with my life". This scale has shown good reliability in past studies (e.g., Blais et al. 1989; Diener et al. 1985), as in this study ($\alpha = .88$). We also measured *satisfaction with one's academic life* with an

adapted version of the SWLS. A sample item was, “If I could start my university degree again, I would choose the same courses” ($\alpha = .88$). Finally, we assessed *positive and negative affect* with the International Positive and Negative Affect Schedule Short Form (I-PANAS-SF; Thompson 2007). Students indicated on a 5-point scale (1 = Never, 5 = Always) the extent to which they experienced affects such as being “alert” or “nervous”. This measure has been found reliable in the past (Thompson 2007). In this study, we obtained Cronbach alphas of .61 and .74 for positive and negative affect, respectively. We calculated a Cronbach alpha value for all items of the four dimensions of SWB (life satisfaction, academic life satisfaction, positive affect and negative affect—reversed) and obtained a value of .72.

4.2.3 Demographic and Control Variables

The questionnaire also included questions on gender, age, cohabiting status, and academic achievement (grade point average [GPA] and number of academic failures).

4.3 Statistical Analyses

4.3.1 Missing Data

A total of 16 % of values were missing from the data. For this reason, we used the full information maximum likelihood (FIML) approach (EQS, version 6.1) compute the product of individual likelihood functions to estimate parameters. Because for cluster analysis, FIML is not possible, multiple estimation (ME) was used for this second series of analyses (SAS, version 9.2).

4.3.2 Estimating Autonomy Support with a Variable-Centered Approach

The proposed model (see Fig. 1) was analyzed via structural equation modeling (SEM), using the EQS model-fitting program (Bentler 1992) with FIML estimation. We used four indices to evaluate model fit: the χ^2 by degrees of freedom ratio (χ^2/df), the Bentler comparative fit index (CFI; Bentler 1990), the Bentler-Bonett non-normed fit index (NNFI; Bentler and Bonett 1980; also known as the TLI), and the root mean squared error of approximation (RMSEA). Although there is no clear guideline for interpreting the χ^2/df ratio, a value lower than 3 is usually recommended (Kline 2005). We used the CFI because it is less affected by sample size and the NNFI because it corrects for model complexity. Possible values for the CFI and NNFI range from 0 to 1 (except for the NNFI, where values could be greater than 1), and it is suggested that values above .90 reflect an acceptable fit (Schumacker and Lomax 1996). Finally, a perfect model fit is reflected by an RMSEA value of 0, whereas values close to .08 indicate reasonable errors of approximation. Models with values over .08 are considered unacceptable (Browne and Cudeck 1993).

4.3.3 Estimating Autonomy Support with a Person-Centered Approach

Cluster analysis was used to identify groups of participants who reported similar levels of autonomy support from parents, friends and the romantic partner. We used Ward’s minimum variance method (Ward 1963) to form the clustering groups and the Euclidean

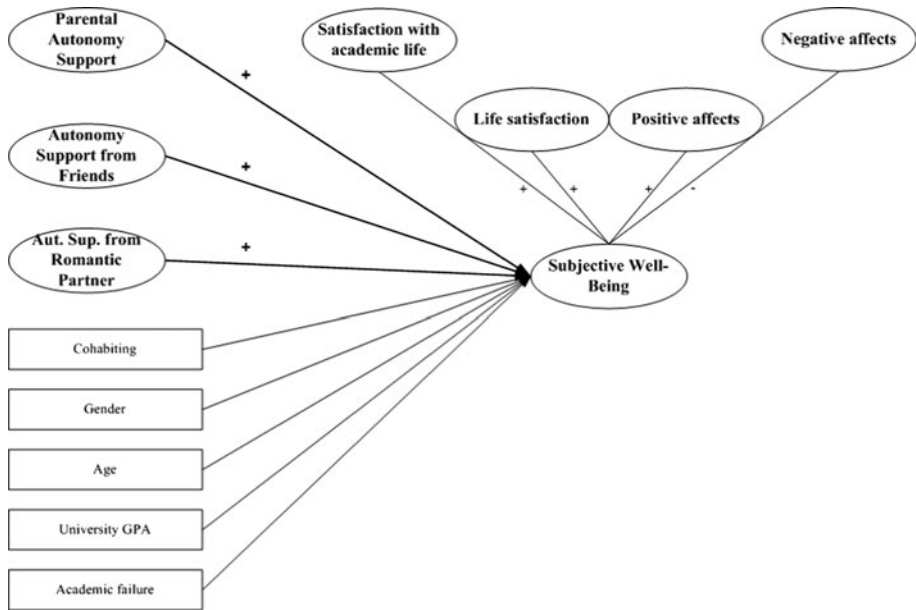


Fig. 1 The hypothesized model

distance to estimate the distance between natural observations on the clustering variables. Because these analyses were exploratory in nature, we estimated models with 2–15 groups. Decisions were based on the theoretical as well as statistical sense of each solution.

5 Results

5.1 Preliminary Analyses

First, data were screened and no major violations of statistical assumptions were observed. Second, we examined gender differences using a multivariate analysis of variance (MANOVA). A significant Wilks's λ (value = .75, $df = 27, 171$, $p < .01$) was obtained, suggesting that male and female students scored differently on several model variables. Univariate tests indicated that young women perceived more autonomy support from friends ($M = 5.93$) and reported higher levels of negative affect ($M = 2.52$) than young men ($M = 5.58$ and $M = 2.29$, respectively). However, gender differences were small to moderate, with gender explaining between 3 and 6 % of the variance.

Second, we performed a MANOVA to test differences between participants who cohabitated with their romantic partner and those who did not. A significant Wilks's λ (value = .90, $df = 11, 222$, $p < .05$) was obtained, which suggests that cohabitating individuals differed from non-cohabitating individuals on some variables. Univariate tests revealed that cohabitating students were older ($M = 23.72$) and reported a higher GPA ($M = 80\text{--}84\%$) than non-cohabitating students ($M = 22.30$ and $M = 75\text{--}79\%$, respectively). There were no differences on measures of autonomy support and SWB, and the magnitude of differences on control variables were small to moderate (1–8 % explained variance).

5.2 A Variable-Centered Approach

5.2.1 Testing the Measurement Model

Before testing the structural portion of the model, we performed a confirmatory factorial analysis (CFA) to verify that our latent constructs were correctly measured, using standardized means. The CFA model included four latent variables (perceived parental autonomy support, perceived autonomy support from friends, perceived autonomy support from the romantic partner, and SWB). Items were averaged to create 3–4 indicators per factor, depending on the number of items per scale (see Fig. 2). This procedure reduces the number of indicators per factor, resulting in a more valid and reliable assessment of indicators (Marsh and Yeung 1997). Moreover, five observed variables (cohabiting with the partner, gender, age, university GPA, and academic failures) were included. One factor loading was set at 1.0 for each latent factor in order to scale them. The χ^2 value for this CFA was 268.25 ($df = 165$; $p < .01$) and the χ^2/df ratio was below 3 (1.63). Fit indices for the model were satisfying (NNFI = .95; CFI = .96; RMSEA = .05), supporting the measurement portion of the model.

Correlations among control variables and latent constructs are presented in Table 1. Positive correlations were obtained between the three sources of perceived autonomy support (parents, friends, and the romantic partner) and SWB (as a global factor and as a function of its underlying dimensions). The strongest correlations were observed for friends ($r = .42$) and parents ($r = .43$), followed by the romantic partner ($r = .17$).

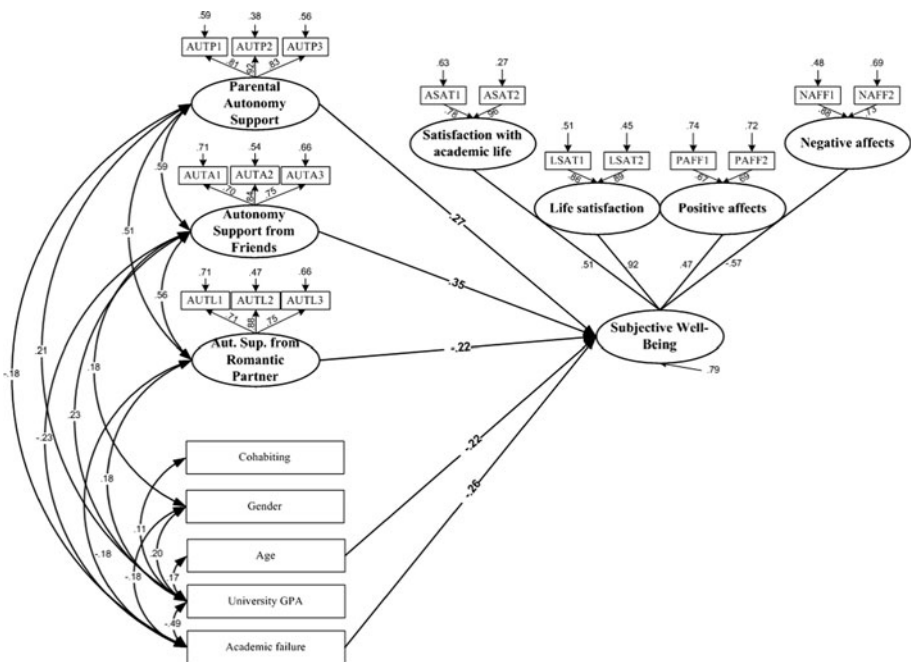


Fig. 2 Obtained structural model. *Note* Control variables are not shown on the figure but they were included in the model as exogenous variables

Table 1 Correlations from the CFA and means and standard deviations for the model variables

Measure	1	2	3	4	5	6	7	8	9
1. Parental AS ^a	–								
2. AS from friends ^a	.59*	–							
3. AS from romantic partner ^a	.52*	.56*	–						
4. Subjective well-being (SWB)	.42*	.43*	.17*	–					
5. Cohabiting	-.04	-.05	.00	-.04	–				
6. Gender	.06	.18*	.05	.01	.09	–			
7. Age	-.04	.01	-.01	-.20*	.26*	.01	–		
8. University GPA ^b	.21*	.23*	.18*	.22*	.11	.20*	.17*	–	
9. Academic failure	-.19*	-.23*	-.18*	-.35*	.02	-.18**	.02	-.49**	–
<i>M</i>	5.67	5.81	6.12	4.53	–	–	22.92	[75–79 %]	1
<i>SD</i>	1.21	.93	.89	.69	–	–	2.55	–	.64

n = 256. AS^a autonomy support

^a Used a 7-point scale

^b Used a 8-point scale

* *p* < .05

5.2.2 Testing the Proposed Model

The proposed model was analyzed using a hybrid SEM, which includes measurement and structural components (Kline 2005). Similar to the previously tested CFA model, the hybrid model was composed of four latent variables (perceived parental autonomy support, perceived autonomy support from friends, perceived autonomy support from the romantic partner, and SWB). Control variables (cohabiting with the partner, gender, age, university GPA, and academic failures) were also included in the model and were assessed by single indicators.

We tested a model that included direct links from perceived autonomy support from parents, friends, and the romantic partner to SWB, as well as from the control variables to SWB. In addition, all exogenous variables were correlated with each other. The χ^2 value for this model was 268.25 ($df = 165$) and was statistically significant ($p < .01$). The χ^2/df ratio was below 3 (1.63), and fit indices were satisfactory (NNFI = .95; CFI = .96; RMSEA = .05).

Results are presented in Fig. 2. SWB was predicted by perceived autonomy support from parents ($\beta = .27, p < .05$), friends ($\beta = .35, p < .05$), and the romantic partner ($\beta = -.22, p < .05$). However, these results should be interpreted with caution because a suppression effect was obtained with perceived autonomy support from the romantic partner. A suppression effect is a statistical artifact in which the relationship between two variables is inverted. Specifically, whereas the correlation between perceived autonomy support from the romantic partner and SWB was positive in the CFA analysis (.17), it was reversed in the hybrid model ($-.22$). According to Maassen and Bakker (2001), suppression is more likely to occur in structural equation models that have latent variables. In such cases, the relationships between variables will be artificially inverted. We shouldn't therefore conclude that this variable undermined SWB. Finally, the relations of the model held over and beyond the contribution of control variables, of which only two significantly predicted SWB ($\beta = -.22$ and $-.26, p < .05$, respectively for age and academic failures).

5.3 A Person-Centered Approach

In this second series of analyses, the first step was to identify groups of participants who perceived similar patterns of autonomy support across parents, friends and their romantic partner. Standardized means for autonomy support from each source (parents, friends and romantic partner) were used as variables in a cluster analysis. As presented in Fig. 3, a five-group solution was obtained. A first group was composed of 92 participants (36 % of the sample) and included individuals who perceived parents, friends, and their romantic partner to be all highly autonomy supportive. A second group was composed of 73 participants (29 % of the sample) and included individuals who perceived all source as moderately autonomy supportive. A third group ($n = 44$; 11 % of the sample), comprised individuals who perceived their parents and friends as unsupportive of their autonomy and their romantic partner as moderately autonomy supportive. A fourth group included 19 participants (8 % of the sample) and was composed of individuals who perceived all sources as unsupportive of their autonomy (or controlling), especially their romantic partner. Finally, a fifth group was composed of 25 participants (10 % of the sample) and included individuals who perceived their parents and romantic partner as moderately autonomy supportive but their friends as unsupportive of their autonomy.

A second step was to test whether these groups of participants differed on the basis of SWB. A two-way MANOVA was performed on measures of life satisfaction, satisfaction

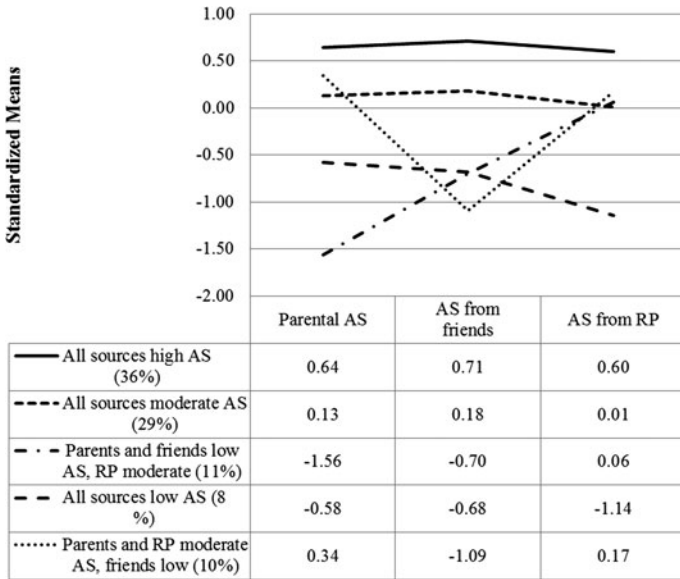


Fig. 3 Standardized (*z*) scores for autonomy support (AS) from parents, friends and the romantic partner (RP) for the five-group solution (*n* = 253). *AS* autonomy support, *RM* romantic partner

with the academic life, positive affect, and negative affect as a function of clustering group and gender, with academic achievement as a covariate. Results of the 2 (gender) × 5 (clustering groups) MANOVA was nonsignificant (Wilk’s λ [16, 730.79] = .91, $p > .05$) but the one-way MANOVA for clustering groups reached significance (Wilk’s λ [16, 730.79] = .74, $p < .01$), suggesting that clustering groups differed across several dimensions of SWB, without interacting with gender. Univariate tests suggested that SWB was highest when all sources were perceived as highly autonomy-supportive (see Table 2). Moreover, it appears to be better for participants’ SWB when all sources were perceived to be moderately autonomy supportive than when only one or two sources were moderately autonomy supportive. Finally, SWB was lowest when all sources were unsupportive.

In sum, findings from variable-centered and person-centered approaches suggest that autonomy support from important sources like parents, friends, and the romantic partner all contributed to higher levels of SWB and that the highest levels of SWB were observed when all sources were perceived as highly autonomy supportive.

6 Discussion

The purpose of the present study was to examine the contribution of perceived autonomy support from parents, friends, and the romantic partner to university students’ subjective well-being (SWB). Using a variable-centered approach, we found perceiving important sources such as parents, friends, and the romantic partner as highly autonomy supportive predicted higher levels of SWB, although a suppression effect was obtained with the romantic partner. Results from a person-centered approach replicated the importance of these three sources, showing that it is when all sources were perceived as highly autonomy supportive that students reported the most positive indices of SWB. These findings

Table 2 Results of one-way ANOVAs on dimensions of SWB as a function of clustering group

	Clustering groups					$F(4,225)$	η^2
	All sources high AS (36 %)	All sources moderate AS (29 %)	Parents and friends low AS, RP moderate (11 %)	All sources low AS (8 %)	Parents and RP moderate AS, friends low (10 %)		
Academic satisfaction ^a	5.44 ^a	5.29 ^a	5.11 ^a	5.07 ^a	4.42 ^b	2.86**	.05
Satisfaction with life ^a	5.898 ^a	5.36 ^b	4.71 ^c	4.94 ^c	4.50 ^c	10.59**	.16
Positive affect ^b	3.99 ^a	3.81 ^b	3.57 ^c	3.65 ^c	3.70 ^c	4.75**	.08
Negative affect ^b	2.37 ^a	2.51 ^b	2.56 ^b	2.48 ^{ab}	2.57 ^b	1.18*	.02

For each dependent variable, means with different subscripts indicate a significant difference at $p < .05$ using Fisher's protected LSD (least significant difference) test

AS autonomy support, RM romantic partner

* $p < .05$, ** $p < .01$

^a Scored on a 7-point scale

^b Scored on a 7-point scale

prevailed over and beyond the contribution of variables such as gender, achievement, and age. We now discuss the implications our findings have for theory and research on SWB and autonomy support in the context of academic persistence.

6.1 Theoretical Implications

Our findings contribute in different ways to the literature on self-determination and well-being. First, our findings support SDT's postulate that autonomy support is critical for well-being (e.g., Deci et al. 1994; Ryan 1995) by providing additional evidence from young adults, in the academic domain. Hence, when students perceived important individuals in their lives to be autonomy supportive with respect to their academic choices and decisions, they reported higher levels of happiness and satisfaction. These findings concur with previous research that showed the importance of autonomy support for different academic outcomes (Deci and Ryan 1987; Grolnick and Ryan 1989; Grolnick 2003; for reviews, see Deci 2008; Guay et al. 2008) as well as students' SWB (Chirkov and Ryan 2001; Downie et al. 2007; Niemiec et al. 2006).

Second, our findings illustrate the beneficial contribution for university students' SWB that need satisfaction comes from three important sources: parents, friends, and the romantic partner. Specifically, it is their combined contribution that was found most profitable for students' SWB. By recognizing their perspective, offering them opportunities to be choiceful and hold responsibilities, and providing consequential rationales for their demands, parents, friends, and the romantic partner contribute to students' SWB, most probably by supporting their psychological needs for autonomy, competence, and relatedness proposed by SDT (Deci and Ryan 2000). Future research should directly test this mediation hypothesis.

Our findings using variable and person-centered approaches supported the additive contribution of these sources' autonomy supportive behaviors. There is ample research on the academic benefits associated with receiving autonomy support in the context of the parent-child relationship (see Pomerantz et al. 2005) and the teacher-child relationship (Chirkov and Ryan 2001; Downie et al. 2007), which are hierarchal in nature. Less attention has been devoted to the contribution of friendship—a relationship characterized as typically equalitarian—to students' SWB. Our findings corroborate those of other studies which showed that perceiving autonomy support from parents and friends was associated with positive indices of SWB (e.g., Chirkov and Ryan 2001; Deci et al. 2006; Kasser and Ryan 1999). At the beginning of adulthood, we expect friends to become increasingly important as young adults tend to share their emotional problems and achieve greater intimacy with their friends (Collins and Madsen 2006). In fact, findings from a variable-centered approach showed that parents and friends have similar contributions to students' SWB, which is congruent with previous studies that showed how relationships with parents and friends are both significant and serve distinct functions in early adulthood (Fraleigh and Davis 1997). Friends are typically those with whom young adults are most likely to spend time (providing proximity), whereas parents are the primary source of advice and support in times of trouble (providing security).

Finally, another important source of autonomy support highlighted by our findings is the romantic partner. Correlational analyses and person-centered analyses revealed that students' SWB is highest when the romantic partner is perceived as highly autonomy supportive. While this source of support cannot replace or compensate for the contribution of parents and friends—as suggested by results from person-centered analyses, which showed that parents and friends need to be as autonomy supportive as the romantic partner for the

student to experience high levels of SWB—it nevertheless needs to be taken into account. Specifically, only when all three sources were perceived as highly autonomy supportive did students report high levels of SWB. These findings are congruent with those of Moller et al. (2010) that supported a sensitization process of need satisfaction. Specifically, they showed that individuals who benefited the most from increased relatedness were those who were already receiving it whereas individuals who reported low levels of relatedness put less value on the additional receipt of relatedness. We believe that this sensitization effect also applies to autonomy where the more autonomy support the individual receives (through autonomy supportive behaviors from significant individuals), the more attuned they will become to situations and relational contexts that promotes the experience of autonomy. Future research is however needed to further test this hypothesis.

When interpreting the findings of this study, some limitations need to be considered. First, all data were obtained from the same source, which may have produced a response bias, especially for measures of autonomy support. Future studies should use measures and data from multiple sources or conduct interviews to reduce this bias. Second, women outnumbered men in the sample (191 vs. 65), which could also have induced biases that limit the generalizability of our findings. Third, the correlational design does not allow formulating causal inferences. We therefore cannot state that autonomy support from parents, friends, and the romantic partner causes increased SWB, as the contribution of other potential determinants could not be ruled out. Fourth, we obtained a suppression effect when testing the proposed SEM model. Our findings therefore need to be replicated to detangle statistical artifacts from the observed relations among constructs. Lastly, this study did not measure the mediating role of the three basic psychological needs in the relation between autonomy support and SWB. Future studies should therefore address these limitations. Other suggestions for future research include: (1) controlling for the quality of the romantic relationship, considering that this variable has been found to be an important predictor of happiness (e.g., Argyle 2001; Berry and Willingham 1997; Demir 2007; Khaleque 2004; Myers 2000); (2) using a longitudinal design to assess possible fluctuations in perceived autonomy support from important sources and its relation to SWB as well as possible recursive effects from SWB to perceived autonomy support; and (3) considering the moment at which university students are being surveyed, as periods characterized as more stressful (e.g., during midterms and finals) might be those where students are more sensitive to the receipt of relational support.

In sum, this research supported the importance of autonomy support from significant individuals to university students' SWB. These results have important practical implications. For instance, intervention programs aimed at supporting university students' academic outcomes such as SWB should target all important relationships in students' lives. Also, as students enter adulthood, their social network widens, and parents might believe that their role in their child's education becomes negligible and that they no longer need to support their child's autonomy. Efforts should therefore be devoted to increase parents' awareness of their role and knowledge of how to provide choices and opportunities for academic decision-making. Moreover, friends and the romantic partner should be informed about their importance and taught how they can support the student's autonomy (e.g., encouraging her to make her own choices). Students' well-being, and ultimately academic success, would consequently benefit from having practitioners working in post-secondary institutions involve significant individuals in the student's life and inform these individuals on the importance of supporting the student's psychological needs for competence, autonomy, and relatedness during this important period.

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