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## Subjective well-being among first-year university students: A two-wave prospective study in Flanders, Belgium

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### Abstract

*In the transition from secondary to tertiary education, first-year students experience stress due to the academic, cultural, and social environment they must adapt to. This may negatively impact their subjective well-being, which in turn may negatively influence academic performance and increase the probability of dropping out. We report findings from a two-wave online study involving first-year students enrolled in a sociology course at the Faculty of Psychology and Educational Sciences at the University of Leuven (Belgium). Students completed self-report questionnaires on sociodemographic background, subjective well-being, parental relationship quality, and personality, at the start (Time 1) and end (Time 2) of the first semester. 194 students (35%) completed measures at both times. Results show that subjective well-being decreased from the beginning to the end of the first semester. Well-being at university was positively, and feelings of depression negatively, related to subjective well-being at Time 1 and Time 2. Female students reported lower well-being than male students at Time 2 but not Time 1. The quality of the mother-child, but not the father-child, relationship was positively related to subjective well-being at Time 1 and Time 2.*

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## Introduction

The transition from secondary to tertiary education is considered to be a source of considerable stress for university students (Dyson & Renk, 2006). Not only do they have to create new social networks, they are also expected to modify their existing relationships with family and friends, and adopt new study patterns (Chickering & Reisser, 1993; Fisher & Hood, 1987). Many students need to learn how to live independently, which entails budgeting their time and money. Literature has shown that students who fail to adapt are more likely to drop out of university than those who adjust well (Blanc, DeBuhr, & Martin, 1983; Gerdes & Mallinckrodt, 1994; Parker, Summerfeldt, Hogan, & Majeski, 2004; Tinto, 1975). Research on this transition is a small field in the social sciences and psychology, and many existing studies have tended to focus on the drop out rate or the academic performance of freshmen<sup>1</sup>. Inquiries into the changes in well-being during students' first year at university are scarce, despite findings that subjective well-being (SWB) is an important predictor of both academic performance (Garcia et al., 2015; Serrano & Andreu, 2016; Wintre et al., 2011) and drop out (Bowman, 2010; Tinto, 1987). In this study, we measure the changes in the SWB of freshmen enrolled at a large university in Flanders (Belgium) over the first three months of their academic lives.

Research has amply shown that the transition to university is associated not only with higher levels of stress, but also with diminished SWB (Stewart-Brown et al., 2000). Female students are more prone to lower levels of SWB as the academic year progresses and tend to report more feelings of depression than male students (Dyson & Renk, 2006; Hardeman et al., 2015; Piko, 2000). These feelings are also more pronounced in students who lived independent of their parents during the transition and are expressed in terms of increased feelings of

homesickness, insecurity, and loneliness (Fisher & Hood, 1988). Parents' cohabitation status has also been found to matter. Young people with divorced parents are more prone to emotional problems, such as depression and anxiety and have been found to experience greater dissatisfaction with life than young people with married parents (Chappel, Suldo, & Ogg, 2014; Fergusson, McLeod, & Horwood, 2014; Mustonen, Huurre, Kiviruusu, Haukkala, & Aro, 2011; Yáñez-Yaben & Garmendia, 2016). Weidman (1989) has identified additional factors that may influence students' SWB in his analysis of forces external to the university undergraduate socialisation process. These include background characteristics that are external to the institution, such as socioeconomic status (SES), gender, parents' cohabitation status, and religious affiliation, and indicators concerning parental socialisation, for example, parent-child relationship and family lifestyle (Weidman, 1989). In addition, students' SWB has been found to be linked to student attrition or drop out (Bowman, 2010). Tinto (1975) theorised that the degree of student integration strongly predicts drop out rates. Both academic and social integration may play an important role in this regard. Academic integration includes academic marks, academic self-esteem, and students' evaluation of the courses they are enrolled in. Social integration covers the students' number of friends, enjoyment of university life in general, and personal contact with academic staff (Tinto, 1987).

The quality of the relationship with parents may also impact well-being (Wintre & Yaffe, 2000). Mutual reciprocity between children and parents is an important feature in this regard, as studies suggest that greater reciprocity in parent-child relationships is associated with increased SWB in students (Wintre & Yaffe, 2000). Several studies have found that increased family support may have a positive impact on SWB, particularly during the

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<sup>1</sup> The term freshmen is commonly referred to as a student who is in his or her first year at university or college.

transition to university (Mattanah, Hancock, & Brand, 2004; Rice, Cole, & Lapsley, 1990). In addition, being able to discuss issues with parents is related to better university adjustment (Cutrona, Cole, Colangelo, Assouline, & Russell, 1994). The degree of parental control is also important, with limited control being found to be beneficial to school success (Steinberg, Elmen, & Mounts, 1989). Finally, personality is associated with SWB (Diener, Suh, Lucas, & Smith, 1999). Extraversion and neuroticism are the two dimensions that have received the greatest attention, with extraversion usually found to be positively related to SWB, and neuroticism negatively (Pavot, Diener, & Fujita, 1990).

## Aims

In the current study, we focus on the link between parental relationships, academic and social integration of freshmen, and the changes in SWB over the first three months at university in a sample of first-year psychology students at the University of Leuven (Flanders, Belgium). Students at this university often live independent of their parents during the academic year (approximately 70% in the current sample). However, as is typical for Belgium, students return to their parental home during weekends, as the small size of Flanders makes weekly commuting easy. These students' academic and social integration, parental relationships, and resilience to university life may therefore evolve differently than that of students in other countries.

We hypothesised that, first, female students would show lower SWB than male students, as gender differences in psychopathology characteristically manifest themselves in the transition from adolescence to young adulthood, with girls typically showing higher levels of depression than boys (Hardeman et al., 2015; Piko, 2000). Second, we expected students from intact families (with married/cohabiting parents) would on average report higher SWB than students from non-

intact families. Third, we expected to find a negative association between the severity of depression and SWB. Finally, we expected that the quality of the parent-child relationship would be positively associated with increased academic and social integration, and increased SWB.

## Methods

In order to map changes in SWB, we distributed an online questionnaire to students who were enrolled in a sociology course at the Faculty of Psychology and Educational Sciences of the University of Leuven in the academic year 2017–2018. The University of Leuven is the largest university in Belgium, with over 55,000 students registered, and is located approximately 20 kilometers east of Brussels, the capital of Belgium. The first assessment took place at the start of the semester, during the first class (at the end of September 2017). The questionnaire was created using Qualtrics, an online platform for developing questionnaires and collecting data. A URL linking to the questionnaire was made available on the official student portal a few minutes before the first class. Students were asked to participate in class via their smartphone, tablet, or laptop. If this was not possible, they had the opportunity to complete the questionnaire at home the same day. In total, 467 of the 551 students enrolled in the course (85%) completed the first assessment (Time 1). In the final lecture of the semester, about three months later (Time 2, end of December 2017), students were asked to complete the same questionnaire, along with several additional measures (see below) via Qualtrics. Again, students were given the opportunity to complete the questionnaire in class. However, due to lower attendance at this time point, students were also given the option to complete the questionnaire at home in the following two days. E-mail reminders were sent out to all students enrolled on the course. A sample of 223 students (40%) completed the measures at Time 2. In total, 194 students

(35%) provided complete data for both Time 1 and Time 2. There were no differences, in terms of sociodemographic features, between these 194 students and the 467 students who completed the measures at Time 1.<sup>2</sup> The survey was in Dutch, the language of instruction.

## Measures

### Subjective well-being and feelings of depression

We measured SWB by asking students to rate how satisfied they currently were in life using an 11-point scale, where '0' indicated high dissatisfaction with life and '10' high satisfaction. Depression was measured using the Center for Epidemiologic Studies Depression scale (Radloff, (1977)). We used an eight-item version of this scale, which has been validated for the Belgian population (Van de Velde, Levecque, & Bracke, 2009). The items ask whether respondents have been feeling depressed, have felt like everything they had to do was too much effort, have been sleeping poorly, have been lonely, have been happy, have enjoyed life, have felt sad, and have felt like they did not want to start their day over the past week. Answer categories ranged from "1 = Rare/never" to "4 = (Almost) always". Two items ("have been happy" and "have enjoyed life") were reverse-scored before calculating the total score. Cronbach's alpha values of this scale were .85 at Time 1 and .86 at Time 2.

### Parent-child relationship quality and student autonomy

Following Weidman's (1989) work on undergraduate socialisation, we included an indicator of the students' relationship with their parents. Mutual reciprocity, spending time with parents, parental trust, appreciation, and caring were assessed for mother and father separately, with answer categories ranging from "1 = None

to very little" to "5 = More is impossible". High scores point to a high-quality parental relationship. Parental control was used as an indicator for student autonomy (Padilla-Walker & Nelson, 2012) and was measured by asking students whether their parents inquire where they go when they go out, what they spend their money on, and who their friends are. This was again assessed for both mother and father, with answer categories ranging from "1 = Do not agree at all" to "5 = Fully agree".

### Academic and social integration

To assess academic integration, we included six items that asked about the commitment of the professor, the difficulty of the course, the relevance of the course to the students' overall academic trajectory, the degree to which students gained new insights, the quality of the study material, and the students' overall satisfaction with the course. Values for these items ranged from "1 = Do not agree at all" to "5 = Fully agree", with a high score indicating high academic integration. Because this concept cannot be reliably measured at the first class of the year, we assessed this factor at Time 2 only. Social integration was measured through two indicators: well-being at university and well-being in secondary school. Data on well-being at university were collected at Time 1 and Time 2; data on well-being in secondary school were collected only at Time 1. Students evaluated their well-being each time on an 11-point scale.

### Personality

We included the Big Five personality characteristics in order to measure students' personality. These dimensions (agreeableness, neuroticism, extraversion, conscientiousness, and openness to experiences) were measured using a 30-item scale containing keywords to construct the necessary dimensions, with answer categories ranging from "1 = Not true at

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<sup>2</sup> More information on these sociodemographics can be provided upon request at david.deconinck@kuleuven.be.

all” to “7 = Completely true”. We used the Dutch translation of the Big Five Inventory, an abbreviated scale developed to measure the factor structure of personality (Costa & MacCrae, 1992; Denissen, Geenen, van Aken, Gosling, & Potter, 2008). Some items were reverse-scored before calculating subscale scores.

### Sociodemographic characteristics

Students were asked to indicate their age, gender, type of secondary education, mother’s educational attainment, parental cohabitation status, and personal living arrangements. Our sample consisted mainly of women (84%). This proportion is representative of the gender ratio of the student population in this faculty. Most respondents had completed general secondary education<sup>3</sup> (96%), had highly educated mothers (74%), married or cohabiting parents (74%), and lived independently from their parents during the week (72%). We used mothers’ educational attainment as a proxy for students’ SES. Previous research has shown that this is a robust indicator for SES in young people in Western Europe, as it is established early in life and remains stable over time (Sirin, 2005). Of the total sample, 93.8% was between 17 and 19 years old (mean age = 18.1 years). An overview of the descriptive features of participants is given in Table 1.

The results of the retention analysis, presented in Table 2, indicate that students who completed assessments at Time 1 and Time 2 did not differ significantly in terms of well-being at Time 1 from the total sample.

### Analytic strategy

The data were analysed using SPSS. Following the findings of the retention analysis (Table 2), we focused on the 194 students who completed both measures, as they did not differ significantly on key indicators of well-being from students who dropped out at Time 2. We ran paired-samples *t*-tests to test whether there was a significant difference in means between SWB at Time 1 and Time 2. We did this for the total sample of 194 students, and for male and female students separately. As SWB in the total sample decreased significantly between Time 1 and Time 2, we conducted a multivariate analysis of variance (MANOVA) with both SWB scores as dependent variables to investigate whether the effect of a number of independent variables (measured only at Time 1) on SWB varied between both measures of SWB. Age, gender, SES, type of secondary education, parental cohabitation status, living arrangement, parental relationship quality and autonomy, and the Big Five personality characteristics were included as independent variables. We also conducted two linear regressions with SWB at Time 1 and Time 2 as the dependent variable, respectively, and factor scores for quality of the parent–child relationship, parental control, Big Five personality characteristics, and academic integration as predictors.

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<sup>3</sup> The second (15–16-year-old pupils) and third (17–18-year-old pupils) degrees of the Flemish secondary school system are divided into four types: general secondary education, technical secondary education, vocational secondary education, and artistic secondary education. In 2016–2017, 41% of second- and third-degree students were enrolled in general secondary education, 31% in technical secondary education, 26% in vocational secondary education, and 2% in artistic secondary education (Flemish Government, 2017).

**Table 2***Descriptive results*

	Number	%
<b>Age (mean; years)</b>	18.1	–
<b>Gender</b>		
Male	31	16.0
Female	163	84.0
<b>Type of secondary education</b>		
General secondary education	186	95.9
Technical secondary education	7	3.6
Artistic secondary education	1	0.5
<b>Mother's educational attainment</b>		
Primary/Secondary education	49	25.7
Higher education	142	74.3
<b>Parental cohabitation status</b>		
Married/Cohabiting	143	73.7
Divorced/Not cohabiting	43	22.2
<b>Living arrangement</b>		
Lives independent of parents	139	71.6
Lives with parents	55	28.4

**Table 1***Retention analysis on students who completed Time 1 assessment and students who completed Time 1 and Time 2 assessments for indicators of well-being at Time 1*

	<i>t</i> -test statistic	<i>p</i> -value	<i>SD</i>
Subjective well-being	–1.05	.29	.17
Well-being at secondary school	–.73	.47	.18
Well-being at university	.39	.70	.15
Depression	1.02	.31	.09

**Results**

As shown in Table 3, there was a significant decrease in SWB from Time 1 to Time 2 in the total sample. However, looking at male and female students separately, this difference was significant only in female students, confirming our first hypothesis. Contrary to expectations,

the MANOVA indicated that the effects of age, SES, type of secondary education, living arrangements, and parental cohabitation status did not change significantly between Time 1 and Time 2 for boys and girls combined (Table 4). The quality of the mother–child relationship, but not the father–child relationship, had an impact on SWB. Results on the assessment of

Big Five personality characteristics showed extraversion to be the only dimension that differed significantly between measures. Hence, we included well-being in secondary school, mother-child relationship quality, and extraversion, along with gender, well-being in university and depression (both of which were

measured at Time 1 and Time 2), in the regression analyses.

The adjusted  $R^2$  results show that 49% of the variance of SWB at Time 1 and 55% at Time 2 was explained by these variables (Table 5). Variance inflation factor (VIF) values indicate only a limited level of multicollinearity, with

**Table 4**

***Paired-samples t-test results and comparison of means***

	<i>t</i> -test statistic	<i>p</i> -value.	<i>SD</i>	Mean
Subjective well-being (total sample)	2.03	.04	–	–
SWB: Male	5.78	.57	–	–
SWB: Female	1.97	.05	–	–
SWB at Time 1	–	–	1.60	7.1
SWB at Time 2	–	–	1.63	6.9

**Table 3**

***Multivariate analysis of variance with students' subjective well-being as dependent variable and selected independent variables***

	Subjective well-being	
	<i>F</i> -values	<i>p</i> -value
Age	1.45	.17
Socioeconomic status	2.18	.12
Type of secondary education	.71	.59
Personal living arrangements	.29	.75
Parental cohabitation status	.85	.43
Well-being in secondary school	13.27	.00
Parental relationship quality and autonomy		
Mother-child relationship quality	4.35	.01
Father-child relationship quality	.39	.68
Parental control by mother	.92	.40
Parental control by father	1.60	.21
Big Five personality characteristics		
Agreeableness	2.61	.08
Neuroticism	2.91	.06
Extraversion	3.46	.03
Conscientiousness	.36	.70
Openness to experience	.22	.80

results for all variables well below accepted criterion levels<sup>4</sup> (Mansfield & Helms, 1982). At Time 1, social integration was significantly related to SWB; both well-being at university (with students having been enrolled for only a few days at this point) and well-being at secondary school had significant positive associations with SWB at Time 1. Feelings of depression were negatively related to SWB, and also exhibited the largest effect size of all indicators, confirming our third hypothesis. A good mother-child relationship had a significant positive impact on SWB, even when controlling for all other variables, which partially confirmed our expectations concerning the importance of parenting. Extraversion and gender were not significantly related to SWB at Time 1.

At Time 2, a different pattern of relationships emerged. Well-being at secondary school was no longer significantly related to SWB. However, well-being at university continued to have a significant positive association with SWB, with its effect now more pronounced than at Time 1. Gender was significantly associated with SWB at Time 2, with female students reporting significantly lower levels of well-being than male students.<sup>5</sup> The strength of the negative association between feelings of depression and SWB was also increased compared with Time 1. The quality of the mother-child relationship was still positively associated with SWB, although its effect was relatively small when controlling for the other variables in the regression analysis. Neither extraversion nor academic integration had a significant impact on well-being at Time 2.

**Table 5**

*Multiple linear regression models with subjective well-being at Time 1 and Time 2 as outcome variables and standardised betas and variance inflation factor (VIF) values of independent variables*

	Subjective well-being			
	Time 1		Time 2	
	Beta	VIF	Beta	VIF
<b>Gender (Reference = Male)</b>				
Female	-.05	1.14	-.13*	1.12
<b>Social integration</b>				
Well-being at university	.24**	1.53	.29**	1.49
Well-being at secondary school	.19**	1.12	.09	1.20
<b>Depression</b>	-.40***	1.53	-.47***	1.63
<b>Parental socialisation</b>				
Mother-child relationship quality	.12*	1.14	.15**	1.19
<b>Big Five</b>				
Extraversion	.08	1.16	.10	1.05
<b>Academic integration</b>			.04	1.10
<b>Adjusted R<sup>2</sup></b>	.49		.55	

Note. \*  $p < 0.05$ . \*\*  $p < 0.01$ . \*\*\*  $p < 0.001$ .

<sup>4</sup> See Appendix A for zero-order correlations between well-being and depression for further information on multicollinearity.

<sup>5</sup> More information on the role of gender in this analysis (detailed difference between boys and girls in SWB in relation to independent variables in Table 5) can be provided upon request.



## Discussion

Students report that the transition from secondary to tertiary education is associated with increased anxiety and stress (Dyson & Renk, 2006), related to the need to adapt to new academic expectations, cultural environments, student communities and social networks (Chickering & Reisser, 1993). Many students also live independently from their parents during the week, which may decrease parental support, sibling contact, and well-being for some (Gerdes & Mallinckrodt, 1994). Well-being has been reported to affect academic performance (Serrano & Andreu, 2016; Wintre et al., 2011) and drop out (Bowman, 2010; Tinto, 1987). Here, we measured the difference in SWB throughout the first semester (academic year 2017–2018) in a sample of students enrolled in a sociology class at the Faculty of Psychology and Educational Sciences at the University of Leuven, Belgium. We found that SWB decreased significantly across the period of observation (from 7.1 out of a maximum of 10 at Time 1, to 6.9 at Time 2). While this—in this case limited—decrease in well-being is in line with previous research, we investigated whether depression, parental relationship quality and control, and academic and social integration may play a role in predicting SWB at Time 1 and 2.

SWB is often found to be related to gender, especially in adolescents, with female students reporting lower well-being than male students (Froh, Yurkewicz, & Kashdan, 2009; Hardeman et al., 2015; Piko, 2000). In our sample, the vast majority of students were female (84%), but this ratio was representative for the faculty. Gender was significantly associated with SWB at Time 2 only, at which point female students reported lower SWB than male students. We found that the effect of SES, type of secondary education, parental cohabitation status, and students' living arrangements did not differ significantly between the two measures of SWB we used. The demographic make-up of our

sample may explain this lack of variance, as a large majority of the sample had completed general secondary education (96%), had high SES (74%), had married or cohabiting parents (74%), and lived independent of their parents during weekdays (72%).

For indicators of academic and social integration, results were mixed. Tinto (1975) argued that a high degree of academic and social integration decreases the probability of student attrition, and that decreased SWB is related to higher drop out (Tinto, 1987). In terms of social integration, well-being in secondary school and in university were both positively associated with well-being at Time 1, with similar effect sizes. At Time 2, well-being in secondary school was no longer significantly related to SWB. The significant impact of well-being in university, however, remained significant at Time 2. Academic integration, which was measured only at Time 2, was not associated with SWB in our sample. Hence, while feelings of well-being in secondary school may impact the SWB of university students initially, as the semester progress, how satisfied and happy students feel at university seems to have a greater impact.

Furthermore, findings of our study are consistent with the large body of literature that links feelings of depression to low SWB (Dyson & Renk, 2006; Fisher & Hood, 1987; Frisch, 2000). In fact, feelings of depression were the strongest predictor of SWB at both Time 1 and Time 2, with effects becoming more pronounced at Time 2. Although there may be considerable overlap between measures of SWB and depression, these findings suggest that freshmen should be routinely screened for depression. Relatedly, in terms of parental relationship quality, we found only partial support for Weidman's (1989) assumptions that parental relationship indicators external to the university impact students' SWB. Parental control and the quality of the father-child relationship were not related to SWB. By contrast, there was a significant, although modest, association between the quality of the

mother-child relationship and SWB at both Time 1 and Time 2. This may point to the greater role of mothers as the primary identification figure and source of support in the transition from late adolescence to young adulthood, as has been typically found in contemporary Western samples (Luyten & Blatt, 2013).

There are some important limitations to this study. Our sample is homogeneous in terms of demographic characteristics and well-being, particularly at Time 1, as noted in the retention analysis. In more heterogeneous samples, different findings may emerge. Gender is one notable aspect in this regard, as the number of male students in our sample was relatively small. Since we used self-report measures, some of our data may be subject to reporting bias (e.g. feelings of depression, evaluation of parental relationships). For future studies, we recommend that researchers attempt to recruit students from different faculties, as there may be substantial differences in demographic features and perhaps also psychological processes in student populations across faculties (Eccles, 2007). The understanding of issues such as retention has been evolving with more nuanced insights in recent times (Demetriou & Schmitz-Sciborski, 2011). Tinto (1975, 1987) expanded his definition of academic support to include establishing communities of scholars and curricular activities, which are not necessarily included in course evaluations. In future studies, including more detailed items on student satisfaction, may lead to a better understanding of academic integration. Finally, extending the period of observation to the entire first year of university may lead to more conclusive findings when considering changes in SWB, with the potential to link these changes to academic performance and drop out.

## Conclusions

This study contributes to a better understanding of the evolution of SWB across the first semester of university life in a sample

of freshmen at the University of Leuven, Belgium. Our findings indicate that low well-being at university, high feelings of depression, and a low-quality mother-child relationship have a significant impact on first-year students' decrease in SWB. Female students were also found to report lower levels of well-being at the end of the semester than male students. Well-being at secondary school was positively related to SWB at the beginning of the academic year, but this relationship disappeared three months into the first semester. We encourage other researchers to investigate this issue. As well-being is a predictor for academic success and drop out, it is important to know how well-being changes, which elements are significant, and (at a later stage) how interventions by universities or faculties could improve students' SWB.

## Recommendations

Recommendations include the recruitment of, and easy access to, student counselors (in each faculty), further backed by a university-wide team of experts. Introducing stress management techniques and gratitude journaling has also been found to have a positive impact on students' classroom engagement (Flinchbaugh, Moore, Chang, & May, 2012), while online strength-based interventions have been shown to positively impact well-being (Koydemir & Sun-Selişik, 2016). It is also vital that information on the consequences of low SWB in students is disseminated among academic staff. This may contribute to the early detection of depressive symptoms in students, a necessary step in prevention procedures. In addition to this (social-) psychological and microsociological approach, it is also important to set up more research into the effects of academic (educational) structures on the well-being of starting students. The planning of the lectures and the time to study before examinations, the organisation of the examinations, the integration of academic life into regular social life, and the availability of educational

supporters are all factors that also have a potential effect on the emotional and social well-being of young people; these are all issues that can be socially-steered and adjusted.

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## Subjective well-being among first-year university students: A two-wave prospective study in Flanders, Belgium

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