

Master's program Clinical Child and Adolescent Psychology

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TITLE: "The link between needs satisfaction and well-being among Greek and Dutch adolescents: Cross-cultural components in the Self-Determination Theory"

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#### Abstract

Self-Determination theory (SDT) is an approach to human motivation and personality that investigates people's growth tendencies and psychological needs. The Basic Psychological Needs Theory (a sub-theory of SDT) claims that the satisfaction of the three basic psychological needs identified by the SDT (the need for *competence*, *relatedness* and *autonomy*) contribute to optimal functioning, well-being and proactivity, whereas the frustration of these basic needs may cause passivity, fragmentation and ill-being in all races and cultures. However, there is a debate regarding the universality of SDT. This study will examine the link between need satisfaction and well-being and test whether this link is related to cultural values -- as some cross-cultural research has shown. In this study 108 Greek and 22 Dutch adolescents filled out online questionnaires assessing their well-being (Subjective Well-Being, Satisfaction with Life, Subjective Vitality), the satisfaction and

frustration of the Basic Psychological Needs as well as their cultural orientation (Vertical – Horizontal Individualism, Vertical- Horizontal Collectivism). Results showed that the satisfaction of these needs predicted well- being in our total sample, whereas need frustration negatively predicted well- being only for relatedness. Also, autonomy satisfaction was important for the well- being of both the Dutch and the Greek participants, whereas the need for relatedness was only important for the Dutch. Autonomy frustration was linked with lower well- being for the whole sample and competence frustration only for the Dutch. This study suggested *weighted* universality, which means that all three needs' satisfaction and frustration are important for well- being, but different patterns were observed depending on the situation. It should be considered as a pilot study for other in the field of cultural psychology because of its limitation of the small sample.

Key words:

Self- Determination Theory; SDT; Basic Psychological Needs; autonomy; relatedness; competence; well- being; satisfaction; frustration; universality; relativity

What predicts adolescents' well-being? In this paper we will examine the link between the satisfaction of basic psychological needs with well-being in adolescents from different cultural backgrounds, that is, from Greece and from the Netherlands. The theoretical framework will be based on the Self-Determination Theory (SDT), a macro-theory developed by Deci and Ryan (2001). The SDT is an approach to human motivation and personality, focusing on people's growth tendencies and psychological needs: autonomy, competence, and relatedness (Ryan, Kuhl & Deci, 1997; Deci & Ryan, 2000).

Adolescence is a key developmental period because of the several changes in the brain, emotional, cognitive, behavioral and social development (Žukauskienė, 2014). Due to the development of self-identity, adolescence is also a critical phase for understanding the development of life goals and how they affect well-being. Moreover, adolescence represents a transition to higher education or to the job market (Li & Feng, 2018).

It has been shown that the satisfaction of the basic psychological needs predicts several aspects of well-being and leads to optimal functioning. Need thwarting, on the other hand, can cause ill-being, passivity and fragmentation (Deci & Ryan, 2001).

However, there is a debate in the research on the Self-Determination Theory regarding the universality of these needs. According to SDT researchers, the three basic psychological needs must be satisfied in all cultures for people to experience optimal functioning, as they believe that these are human innate tendencies, not dependent on cultural norms, values and goals (Deci & Ryan, 2000).

On the other hand, some studies that have examined differences in the correlations of well-being with basic psychological needs have questioned the universality of the basic needs, suggesting that in collectivistic societies autonomy, for instance, may not explicitly be valued (Markus & Kitayama, 2003; Oishi & Diener, 2001). While previous studies have focused mostly on the need for autonomy, this study will try to give insight into the meaning of all three psychological needs cross-culturally. While previous research has mostly compared people from different continents and very different cultures, such as the United States with eastern countries, for instance China, this study will compare adolescents from two European countries, which differ in values and economic status. We assume that this comparison may yield useful insights regarding the question whether norms for basic

needs vary across cultures, and how different normative levels of needs are related to well-being. Do norms for basic needs differ across cultures, and if so, are higher norms for basic needs also related to the experience of more well-being, or is the experience of well-being relative to the norm?

### **Self- Determination Theory**

Self-Determination Theory (SDT) is a meta-theory that represents a broad framework for the study of human motivation and personality. As a macro- theory, SDT addresses some basic issues as self- regulation, personality development, basic psychological needs, aspirations and life goals and vitality (Deci & Ryan, 1985; Deci & Ryan, 2000; Deci & Ryan, 2008). This macro-theory includes several mini- theories. This study will focus on the mini- theory of Basic Psychological Needs Theory (BPNT).

#### Basic Psychological Needs Theory

Early need theories specified sets of needs, such as food, water, sex which are physiological and their satisfaction keeps the organism healthy (Hull, 1943). Later, the focus turned to the psychological level of needs and it was suggested by Spence (1956) that almost anything that moves a person to action can be considered as a need.

Self- Determination Theory uses the basic psychological needs as a basis to differentiate goal contents and regulatory processes and studies the results of those differentiations. Moreover, research grounded in SDT (Deci & Ryan, 2000; Ryan & Deci, 2000b) has shown that humans have the tendency to move towards growth, through processes such as social internalization, intrinsic motivation, integration, and connection with others (Deci & Ryan, 2000; Vansteenkiste & Ryan, 2013). Besides, these processes occur only under socially supportive circumstances, which, according to SDT, are those circumstances that fulfill the basic psychological needs (Deci & Ryan, 2000). In fact, these needs are defined as required for optimal functioning and well- being (Ryan, 1995).

Three basic psychological needs have been empirically identified, namely autonomy, competence and relatedness. *Autonomy* refers to the experience of volition and self-endorsement of one's activity (Ryan & Deci, 2006) and is afforded when behavior is self- chosen and thwarted when it is pressured by other forces. The need

for *competence* refers to the experience of a sense of effectiveness and mastery in interacting with one's environment (White, 1959; Harter, 1978). It mainly occurs when opportunities are provided to obtain skills and feedback that support effectiveness. Finally, *relatedness* concerns the experience of love and care by significant others. Thus, it is experienced in caring environments, where the person cares for important others and is cared for. If thwarted, one feels disconnected and isolated (Baumeister & Leary, 1995; Deci & Ryan, 1985).

Numerous studies conducted in domains as diverse as sport, education, work, health care, psychotherapy, parenting etc. have shown the importance of needs satisfaction and how it contributes to optimal functioning and a variety of well-being outcomes (e.g., life satisfaction, subjective vitality) and proactivity at both general and daily levels (Deci & Ryan, 2000; Deci & Ryan, 2008; Gagné, Ryan, & Bargmann, 2003; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Ryan, Bernstein, & Brown, 2010). Also, research has shown that the satisfaction and frustration of psychological basic needs are likely to contribute to psychological functioning especially in the critical phase of adolescence (Chen et al. 2015; Vansteenkiste & Ryan 2013). More specifically, needs satisfaction is related to school engagement and higher self-esteem in adolescents (Ummet, 2015), positive development of Self, which in turn predicts high levels of self-acceptance, ( Kipp & Weiss, 2015; Ryan et al., 2006), gratitude (Tian et al., 2016), and a sense of autonomy and connection with significant others (Di Domenico et al., 2013). However, exposure to critical, controlling or rejecting social contexts can lead to frustration of these basic needs, something that causes passivity, fragmentation and ill-being (e.g., Bartholomew, Ntoumanis, Ryan, Bosch, &Thøgersen-Ntoumani, 2011). Furthermore, it has been shown that need satisfaction plays a mediating role in the relationship between intrinsic goals and well- or ill- being (Raj & Chettiar, 2012), school social support and well-being (Tian et al., 2016) and in the effect of poor economic conditions and safety (Gonzalez et al., 2014; Di Domenico & Fournier, 2014; DeHaan, 2015; Chen et al., 2016).

The first aim of this paper is to examine the relationship of the basic psychological needs with adolescents' well-being. In line with previous studies, we hypothesize that the satisfaction of the basic psychological needs predicts well-being in our sample. More specifically, we hypothesize that need satisfaction will be linked

to subjective well-being and subjective vitality, discussed below. It is expected that need frustration is related to lower levels of well-being.

### **Well-being**

Well-being refers to optimal psychological experiences and functioning and has been studied over decades by various psychologists. SDT has focused on eudaimonic aspects of well-being, which are characterized by pursuing intrinsic goals and values, behaving in volitional and autonomous ways, being mindful and behaving in ways that satisfy the basic psychological needs. SDT suggests that the three first ways of eudaimonic living lead to psychological well-being by the facilitation of autonomy, competence and relatedness (Ryan, Huta, Deci, 2008). It claims that well-being is not simply the subjective experience of positive affect, but also an organismic function in which the individual detects the presence or absence of vitality (Deci & Ryan, 2000).

Before analyzing the main aspects of well-being that will be considered in the present study, several specific aspects of well-being should be distinguished. At first, Ryff (1995) derived six core dimensions for positive psychological functioning, namely, self-acceptance (positive attitude toward self), positive relations with other people, autonomy, environmental mastery, purpose in life, and personal growth. Seligman (2011) created the PERMA model of flourishing and identified positive emotions, engagement, relationship, meaning and accomplishment as the most important aspects for well-being. Finally, Scheier and colleagues (Scheier & Carver, 1985) suggested that optimism predicts physical health and positive functioning.

In the SDT, the consideration of well-being as a subjective experience of positive affect is the most important aspect of well-being. Diener and colleagues (Diener, 1984, 2000; Diener & Chan, 2011) established that this experience, also called Subjective Well-Being (SWB), is one of the most important dimensions of psychological well-being, causing health and longevity. In fact, SWB is conceived by several studies as an important indication of “how life is going” and as the dimension that can examine the extent to which other psychological well-being aspects or needs are fulfilled (Diener, Su, Tay, 2014; Huta & Ryan, 2006; Ryan, Huta, Deci, 2008). Moreover, SWB is particularly pertinent in adolescence, because of the various

psycho-physical transitions in this phase. More specifically, studies have indicated that students with higher general life satisfaction, which is the cognitive aspect of general SWB, reported better outcomes at school both academically and emotionally (healthier relationships with peers, parents, higher levels of hope, self-esteem) (Gilman & Huebner, 2006; Marques et al., 2011).

Another dimension that is a consequence of eudemonic living and important in SDT, is, as we mentioned above, the sense of vitality. Vitality may covary with both somatic and psychological factors and it is the energy that is available to the self, which is empowering and allows people to be engaged in more important activities and act more autonomously. It is described as a positive feeling of energy, aliveness, and alertness which is part of being fully functioning and psychologically well and it has been proved to predict long- term well- being (Ryan & Frederick, 1997; Ryan & Deci, 2001).

### **Universality vs Relativity of SDT**

Research in cross-cultural social psychology has hypothesized that culture influences human behavior and that cultural factors predict values, self and motivation of individuals and groups (Markus & Kitayama, 1991). SDT claims that the three basic psychological needs are universal and must be satisfied in all countries for people to be mentally healthy and functioning, as it posits that these needs and integrative propensities are part of human nature (Deci & Ryan, 2000).

An increasing number of studies has proved the universality claim of SDT and the fact that people would benefit from basic psychological need satisfaction regardless of race or cultural values (Ryan & Deci, 2001; Chirkov, Ryan, Kim, Kaplan, 2003). Studies in non- Western countries have shown that autonomy can be distinguished from interdependence and that there are better outcomes for personal and relational well- being for those emphasizing autonomy, rather than independence (Van Petegem, Beyers, Vansteenkiste, & Soenens, 2012). Also, in SDT autonomy has been distinguished from individualism (Deci & Ryan, 2000). Moreover, Chirkov, Ryan, Kim, and Kaplan (2003), who assessed the motivation of undergraduates from South Korea, Turkey, Russia and the U.S found that autonomy was positively associated with well- being both in collectivistic and individualistic type of behaviors.

Similar results were found in a study with Canadian and Brazilian participants (Chirkov, Ryan, & Willness, 2005).

On the other hand, some cross-cultural studies (Markus & Kitayama, 2003; Miller, 1997; Oishi & Diener, 2001) have questioned the universality of the basic needs, suggesting that in collectivistic societies for instance autonomy may not explicitly be valued. More specifically, they found that the degree to which satisfaction with the basic needs predicts global life satisfaction, varies across cultures, depending on salient cultural values. Also, they suggested that autonomy is not important universally and they characterized them more as a western cultural ideal, as the majority of data supporting SDT have been collected within the U. S (Markus & Kitayama, 2003; Oishi, 2000).

In terms of cultural and contextual differences, the most important differences between the needs satisfaction and upcoming well-being are hypothesized to occur between cultures that vary in individualism and collectivism. According to Hofstede (2001), collectivism and individualism is related to the degree of interdependence among members of a culture and how they define themselves. In our study, the variable will be represented by including adolescents from The Netherlands and Greece. In collectivistic societies like Greece, people define themselves with “we”, which means that people are integrated into the strong group of the extended family and protect its members in multiple settings in exchange for loyalty. However, in individualistic societies, like the Netherlands people are expected to look after themselves and their close family only.

In this study, the dimensions of individualism/collectivism will be examined by the cultural descriptions of Triandis and Gelfand (1995). Triandis and Gelfand distinguish between horizontal and vertical individualism and collectivism. In Horizontal Individualism people want to be distinct from groups, independent and they are not interested in having high status, in contrast to Vertical Individualism in which people distinguish themselves from the group but in individual competition with others. In Horizontal Collectivism people consider themselves interdependent with the members of their group, having similar goals, but they do not submit easily to authority (Triandis & Gelfand, 1995; Triandis & Gelfand, 1998). The constructs of Vertical and Horizontal types correspond to the difference highlighted by Hofstede (2001) regarding the level of masculinity and femininity within these two cultures. Therewith, Greece is a society which is driven by competition, achievement and



success in comparison to the Netherlands, which is a culture in which life and work balance, involvement equality, solidarity and quality especially in the working domain are the most important aspects (Pouliasi & Verkuyten, 2010; Hofstede, & Minkov, 2010; Hofstede, 2001).

In sum, by adapting the distinction between horizontal and vertical individualism and collectivism, we can also test the most important aspect of masculinity, that is, the emphasis on competition, hierarchy, comparison to others and achievement. It is hypothesized that Dutch participants would score higher on the Horizontal Individualism, while the Greek participants will score higher on Vertical Collectivism.

In addition to cultural values, The Netherlands and Greece also differ in terms of economic resources. Greece experiences a great economic recession, in comparison with the Netherlands. The economic recession may affect the need thwarting experiences of Greek adolescents as well as their well-being (Kokkevi, Stavrou, Kanavou, Fotiou & Richardson, 2017).

To conclude, the aim of this research is to examine how need satisfaction or frustration is linked to well-being in a sample of adolescents with different cultural backgrounds and economic resources. More specifically, this study will investigate the correlation between *needs satisfaction* and *well-being*. We will try to identify if these basic psychological needs meet a universal level or a relative level depending on the cultural norm and if the norms for well-being will be the same for everyone. We hypothesize that the need for autonomy would be predicted by individualistic cultural practices and the need of relatedness by collectivistic ones. Moreover, autonomy satisfaction is expected to be more important for the Dutch adolescents' well-being, while the satisfaction of relatedness is more important for the Greek.

## Method

### Participants

The present study used data from 129 participants, of which 107 were Greek and 22 Dutch. Among our participants 12 % were 16 years old (9,1 % in the Dutch; 15% in the Greek), 43,4% were 17 years old ( 40,9 % in the Dutch; 45.8% in the Greek) and 45% were 18 years old (50% in the Dutch; 39,3% in the Greek). Moreover, almost 33% of the adolescents in our total sample were boys (36,4% in the Dutch; 29% in the Greek). Furthermore, 22,7 % of our Dutch participants was from big cities (e.g., Amsterdam, The Hague, Rotterdam, Utrecht), while 77,6% of the Greek were from big cities (e.g., Athens). The largest percentage of our Dutch participants (59,1%) was from smaller cities (e.g., Leiden, Delft etc.) and 18,7% Greek were coming from smaller cities (e.g., Thessaloniki, Patras, Larissa etc). Only 2,9% from the Greek adolescents were from villages or islands, in comparison to 13,6 % of the Dutch. The largest part of the Greek parents had finished University (39,3% fathers; 40.4% mothers), while there were also many parents who only finished High School (29% fathers; 39.3% mothers). Dutch parents had mostly finished University or Technical University. Parents' profession corresponded mostly to average salaries in both nationalities (45.5% Dutch; 52.3% Greek).

### Procedure

The data were collected through social media (Facebook, Instagram). After reading the purpose of the study and the practicalities, the participants had to fill out an online questionnaire, which would take almost 15 minutes. Before we started the procedure, we made sure that our participants are in the age to legally decide by themselves without parental consent.

Table 1  
*Sample characteristics*

	Dutch (N = 22)		Greek ( N = 107)		Greek ( N= 2)	
	N	%	N	%	N	%
<b>Age</b>						
16 years old	2	9.1%	16	15.0%	2	9.1%
17 years old	9	4.9%	49	45.8%	9	4.9%

18 years old	11	5.0%	42	39.3%	11	5.0%
<b>Gender</b>					8	
Male	8	36.4%	31	29.0%	14	36.4%
Female	14	63.6%	76	71.0%	8	63.6%
<b>Birthplace</b>						
Big city	5	22.7%	83	77.6%	12	36.4%
Smaller city	13	59.1%	20	18.7%	2	54.5%
Village/Island	3	13.6%	3	2.8%	0	9.1%
Big city other country	0	.0%	1	.9%	0	.0%
Smaller city other country	1	4.5%	0	.0%	0	.0%
Village/island other country	0	.0%	0	.0%	8	.0%
<b>Father's educational level</b>						
Elementary school	1	4.5%	3	2.8%	0	.0%
Gymnasium	1	4.5%	16	15.0%	2	9.1%
Vocational High school	2	9.1%	1	.9%	1	4.5%
General High school	4	18.2%	31	29.0%	7	31.8%
College/After high school education	4	18.2%	6	5.6%	1	4.5%
Technical University	5	22.7%	8	7.5%	2	9.1%
University	5	22.7%	42	39.3%	9	4.9%
<b>Mother's educational level</b>						
Elementary school	0	.0%	2	1.9%	0	.0%
Gymnasium	1	4.5%	7	6.5%	1	4.5%
Vocational High school	3	13.6%	1	.9%	1	4.5%
General High school	3	13.6%	42	39.3%	6	27.3%
College/After high school education	2	9.1%	4	3.7%	2	9.1%
Technical University	10	45.5%	7	6.5%	3	13.6%
University	3	13.6%	44	41.1%	9	4.9%
<b>Father's salary</b>						
no salary	0	.0%	3	2.8%	1	4.5%
below average salary	5	22.7%	26	24.3%	2	9.1%
average salary	10	45.5%	56	52.3%	16	72.7%

above average salary	6	27.3%	22	2.6%	3	13.6%
rich	1	4.5%	0	.0%	0	.0%
<b>Mother's salary</b>						
no salary	2	9.1%	18	16.8%	2	9.1%
below average salary	0	.0%	16	15.0%	5	22.7%
average salary	15	68.2%	55	51.4%	11	5.0%
above average salary	5	22.7%	17	15.9%	4	18.2%
rich	0	.0%	1	.9%	0	.0%

Note: the matched Greek sample was determined by checking for differences between Greek and Dutch participants for all the demographic characteristic. Chi square tests were performed which resulted that there was no statistical significant difference between the two sample for all the demographic characteristics (Appendix).

## Measures

In the present study the following questionnaires were used. The English version of the questionnaires was used for both the Dutch and the Greek sample.

### Basic Psychological Needs Satisfaction and Frustration

To assess the satisfaction and frustration of the basic psychological needs we used *the basic psychological need satisfaction and frustration scale* by Chen et al. (2015), which is a self-report questionnaire assessing both the satisfaction and frustration of the psychological needs for autonomy, competence and relatedness. It consists of 24 items (e.g., “I feel a sense of choice and freedom in the things I undertake”), rated on a 5point-likert scale from 1=not true at all to 5=completely true. The internal consistency was good (Hinton, 2014). For the autonomy satisfaction subscale  $\alpha = .70$ , the autonomy frustration  $\alpha = .77$ , relatedness satisfaction  $\alpha = .77$ , relatedness frustration  $\alpha = .68$ , competence satisfaction  $\alpha = .73$  and for competence frustration  $\alpha = .81$ .

### Well- being

*Subjective Well- Being Questionnaire* (Su, Tay & Diener, 2014): To measure Subjective well- being the English version of the “Subjective well- being” scale of the *Comprehensive Inventory of Thriving (CIT)* developed by Su, Tay and Diener (2014) was used. These items constitute 3 sub- scales: (1) life satisfaction, (2) positive affect,

(3) negative affect. It is a 9- items questionnaire, which includes, 3- item (e.g., “My life is going well”, “I feel positive most of the time”, “I feel negative most of the time”) sub- scales, with a response scale from 1 (Strongly Agree) to 5 (Strongly Disagree). The Subjective Well- being questionnaire showed high internal consistency, as  $\alpha = .90$ .

*Satisfaction with Life Scale* (Diener, Emmons, Larsen, & Griffin, 1985): Additionally, we used the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). This 5-item (e.g., “In most ways my life is close to my ideal) instrument is designed to measure global cognitive judgments of satisfaction with one's life. It includes 2 items that are also included in the CIT's subscale for life satisfaction and 3 more items, not present in the CIT's sub-scale of life-satisfaction. It is a 7- point Likert scale ranging from 1 (Strongly Agree) to 7 (Strongly Disagree). The alpha for the scale was  $\alpha = .75$ , indicating high internal consistency among the five items (Hinton, 2014).

*Subjective Vitality*: To measure Subjective Vitality we will use the Subjective Vitality Scale (Ryan & Frederick, 1997), which is a 7- item instrument with a 7- point Likert scale ranging from 1 (not true at all) to 7 (very true). This scale measures the state of feeling alive and alert - the energy available to the self (e.g., “I feel alive and vital”). The alpha for the scale is  $\alpha = .88$ , indicating that it has high internal consistency.

**Individualism and Collectivism:** To measure the four dimensions of collectivism and individualism we used the Individualism and Collectivism Scale (Triandis & Gelfand, 1998) which is a 16-item instrument. It includes four items to assess each type of cultural practice, namely Vertical Collectivism (“Parents and children must stay together as much as possible”); Vertical Individualism (It is important that I do my job better than others); Horizontal Collectivism (If a coworker gets a prize, I would feel proud); Horizontal Individualism (e. g “I'd rather depend on myself than others”). All items are answered on a 9-point scale, ranging from 1= never or definitely no and 9 = always or definitely yes. The internal consistency of the Horizontal Individualism was scale was  $\alpha = .63$ , Vertical Individualism  $\alpha = .74$ , Horizontal Collectivism  $\alpha = .69$  and Vertical Collectivism  $\alpha = .63$ . In general the internal consistency of the subscales was good.

## **Data Analysis**

The data analysis was performed in SPSS IBM 26. The alpha coefficients were calculated for each scale and their subscales in both the Greek and the Dutch sample to test for any cultural differences. At first, all the items for well-being were computed into one variable ("Well-Being"). Moreover, Pearson's correlations were computed to examine the strength and direction of the association between all our variables. Also, Analysis of Variance was performed for each variable to examine the differences between the Mean scores of the Greek and the Dutch participants. Because the Greek sample was much larger than the Dutch sample, correlations between the variables within each sample were not comparable. Therefore, the Dutch sample was matched to a part of the Greek sample by means of the demographic characteristics. Chi square tests were performed to test the match. No statistically significant differences between the two matched samples for each of the demographic characteristics were apparent.

Furthermore, linear regression analysis was performed to examine the link between the basic psychological needs satisfaction and frustration with well-being in our total sample. Linear regression analysis was also used to assess the relationship between each cultural practice (Horizontal Individualism, Vertical Individualism, Horizontal Collectivism, Vertical Collectivism) and the satisfaction of each psychological need (autonomy, competence, relatedness). Finally, stepwise linear regression was performed in the Dutch sample (N=22) and in the matched Greek sample (N=22), to examine how strongly basic psychological needs satisfaction and frustration predict well-being in our participants.

## Results

### *Preliminary analyses*

Table 2

### *Reliability Analysis*

	Cronbach's alpha (n = 129, Dutch & Greek)	Cronbach's alpha (n = 107, Greek)	Cronbach's alpha (n = 22, Dutch)
<b>BPNSF Questionnaire</b>			
Autonomy satisfaction	.70	.66	.88
Autonomy frustration	.77	.75	.84
Relatedness satisfaction	.77	.77	.81
Relatedness frustration	.68	.66	.77
Competence satisfaction	.73	.71	.86
Competence frustration	.81	.87	.81
<b>Well- Being Questionnaire</b>			
Subjective Well- Being	.92	.91	.96
Satisfaction with Life	.90	.87	.97
Satisfaction with Life	.75	.72	.85
Subjective Vitality	.88	.88	.86
<b>COS Questionnaire</b>			
Horizontal individualism	.63	.58	.82
Vertical individualism	.74	.71	.85
Horizontal collectivism	.69	.69	.73
Vertical collectivism	.63	.61	.61

Table 3  
*Descriptive statistics for the Greek and Dutch sample*

	Whole sample (N=129)		Greek (N=107) (1)		Dutch (N=22) (2)		Greek (N=22) (3)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1) Autonomy Satisfaction	3.83	.95	3.85	.73	3.70	.84	3.80	0.73
2) Relatedness Satisfaction	4.28	1.13	4.30	.61	4.23	.62	4.30	.54
3) Competence Satisfaction	3.82	.58	2.98	.92	3.88	.69	3.90	.54
4) Well- being	4.20	.84	4.24	.80	4.09	1.05	4.21	.84
5) Horizontal Individualism	6.8	1.36	6.85	1.32	6.68	1.54	6.97	1.4
6) Vertical Individualism	5.3	1.64	5.43	1.55	4.69	1.93	5.51	1.37
7) Horizontal Collectivism	7.19	1.12	7.24	1.10	7.01	1.19	7.42	1.08
8) Vertical Collectivism	6.61	1.32	<b>6.77</b>	1.28	<b>5.80</b>	1.21	<b>6.98</b>	1.16

In table 3 the mean values and standard deviations for well- being, collective orientation and need satisfaction can be observed for the whole sample (129), the Greek sample (N = 107), the Dutch sample (N = 22) and the matched Greek Sample (N = 22). It can be observed that the mean values of the autonomy satisfaction, relatedness satisfaction, well- being, horizontal individualism and horizontal collectivism for the Greek (N = 107 or N = 22) and the Dutch sample are mostly very similar.



Table 4

*One Way Anova for the differences on well – being, culture orientation and need satisfaction between the Greek and Dutch sample*

	Comparison 1 with 2				Comparison 2 with 3			
	Total Greek versus Dutch sample				Matched Greek versus Dutch sample			
	<i>F</i> (1,127)	<i>p</i>	$\eta^2$	power	<i>F</i> (1,127)	<i>p</i>	$\eta^2$	power
1	.708	.402	.006	.133	.184	.670	.004	.070
2	.233	.630	.002	.077	.417	.522	.010	.097
3	.165	.685	.001	.069	.033	.857	.001	.054
4	.454	.602	.004	.116	.187	.668	.004	.071
5	.273	.602	.002	.081	.448	.507	.011	.100
6	3.729	.056	.029	.483	2.614	.113	.059	.352
7	.752	.387	.006	.138	1.422	.240	.033	.214
8	10.770	.001	.078	.903	11.075	.002	.209	.902

Note: numbers 1, 2 and 3 represent samples 1 (Greek, N = 127), 2 (Dutch, N = 22) and 3 (Matched Greek, N = 22), \*  $p < .05$ , \*\*  $p < .01$

A one-way ANOVA was conducted to determine if the Dutch and the Greek participants differed on the variables measured. Tables 3 and 4 show that the Greek participants (N = 107) exhibit a higher level of vertical collectivism compared to Dutch participants ( $M_G = 6.77$ ,  $SD_G = 1.28$  vs  $M_D = 5.80$ ,  $SD_D = 1.21$ ). The same result was true for the matched Greek sample compared to the Dutch sample ( $M_G = 6.98$ ,  $SD_G = 1.16$  vs  $M_D = 5.80$ ,  $SD_D = 1.21$ ). No other differences were apparent.

### *Correlations and predictions*

Table 5

*Pearson correlations between all variables*

	1	2	3	4	5	6	7	8	9	10
1. Wellbeing	-									
2. Horizontal individualism	.182*	-								
3. Vertical individualism	-.119	.255**	-							
4. Horizontal collectivism	.293**	.367**	.014	-						
5. Vertical collectivism	.338**	.319**	.054	.374**	-					

6.Autonomy satisfaction	.601**	.180*	-.059	.236**	.238**	-				
7.Relatedness satisfaction	.448**	.255**	-.085	.483**	.281**	.343**	-			
8.Competence satisfaction	.490**	.322**	.079	.302**	.286**	.467**	.447**	-		
9.Autonomy frustration	-.468**	-.080	.334**	-.202*	-.105	-.457**	-.305**	-.291**	-	
10.Relatedness frustration	-.288**	-.177*	.211*	-.373**	-.289**	-.265**	-.614**	-.337**	.416**	-
11. Competence frustration	-.501**	-.131	.208*	-.318**	-.206*	-.393**	-.321**	-.572**	.472**	.442**

\*\* p<.01, \*p<.05

According to Table 5, most variables in this study were correlated. At first, Well-Being was significantly associated with all the variables except of Vertical Individualism. Moreover, Horizontal Individualism was correlated with all the other cultural orientations and the needs satisfaction, but it was not correlated with the frustration of autonomy and competence. Regarding Vertical Individualism it is demonstrated that it is positively related with the need's frustration only. Furthermore, Horizontal Collectivism was highly correlated with all the other variables, except for Vertical Individualism, as referred before. Vertical Collectivism was correlated with all variables except for autonomy frustration and Vertical Individualism. The satisfaction of each need was correlated with all the variables in our model. Finally, the correlation analysis showed that autonomy, relatedness and competence frustration are related to each other.

Table 6  
Regression model: Need satisfaction predicting well – being

Total, N=129				
	B	SE B	t	p (β)
Well-Being				
Autonomy Satisfaction	<b>.494</b>	.440	5.792	<b>.000</b>
Relatedness Satisfaction	.292	.212	2.825	<b>.006</b>
Competence Satisfaction	.215	.190	2.384	<b>.019</b>
F (3, 125) = 35.5. p = .000. R <sup>2</sup> adj = .439				

To test the Self-Determination Theory in our total sample we ran a stepwise linear

regression analysis, which established that the satisfaction of the basic psychological needs (autonomy, relatedness, competence) could significantly predict well-being,  $F(3, 125) = 35.5, p < .05, R^2_{adj} = .439$  in our total sample (Dutch+ Greek participants). The satisfaction of all three basic needs accounted for 43.9% of the explained variability in well- being. Our strongest predictor is Autonomy Satisfaction. A 1- point increase is associated with a 0.494- point increase in wellbeing. When there is an increase of one point either of autonomy satisfaction or relatedness satisfaction or competence satisfaction then well-being increases by .494, .292 and .215 points respectively. In other words, all dimensions of need satisfaction have a positive effect on well- being.

Table 7

*Regression model: Need frustration predicting well – being*

Total, N=129				
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p (β)</i>
Well- Being				
Autonomy Frustration	<b>-.272</b>	-.295	-3.404	<b>.001</b>
Relatedness Frustration	-.007	-.007	-.082	.935
Competence Frustration	-.298	-.359	-4.082	<b>.000</b>
$F(3, 125) = 19.6. p = .000. R^2_{adj} = .304$				

To replicate our findings, we also ran a stepwise linear regression analysis to examine if needs frustration predicts well- being in our total sample. The model established that the frustration of autonomy and competence significantly predict well- being. Relatedness frustration did not significantly predict well- being. The frustration of all three basic needs accounted for 30% of the explained variability in well- being. In other words, only autonomy and competence frustration have a negative effect on well- being in our total sample (N= 129).

Table 8

*Regression model: Cultural practices predicting need satisfaction*

Total, N=129				
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )
Autonomy Satisfaction				
Horizontal Individualism	.057	.103	1.056	.293
Vertical Individualism	-.044	-.096	-1.078	.283
Horizontal Collectivism	.094	.140	1.452	.149
Vertical Collectivism	.090	.159	1.683	.095
F (4, 124) = 3.25, <i>p</i> = .014, $R^2_{adj}$ = .066				
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )
Relatedness Satisfaction				
Horizontal Individualism	.047	.105	1.189	.237
Vertical Individualism	-.046	-.123	-1.537	.127
Horizontal Collectivism	.224	.409	4.704	<b>.000</b>
Vertical Collectivism	.047	.101	1.190	.236
F (4, 124) = 11.17, <i>p</i> = .000, $R^2_{adj}$ = .239				
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )
Competence Satisfaction				
Horizontal Individualism	.114	.207	2.214	<b>.029</b>
Vertical Individualism	.007	.015	.175	.861
Horizontal Collectivism	.111	.167	1.799	.074
Vertical Collectivism	.089	.157	1.729	.086
F (4, 124) = 6.04. <i>p</i> = .000. $R^2_{adj}$ = .136				

To test the general assumption about cultural practices and how they predict satisfaction of the three basic psychological needs, a stepwise linear regression analysis for each basic need was conducted for the whole sample (N= 129). This model showed that autonomy satisfaction cannot be significantly predicted by any of the cultural practices (HI, VI, HC, VC). Relatedness satisfaction was predicted by Horizontal

Collectivism ( $b = .224, p = .000$ ) and Competence Satisfaction by Horizontal Individualism ( $b = .114, p = .000$ ). This means that when horizontal collectivism increases by one point, there is an increase of .224 points of relatedness satisfaction. Furthermore, when horizontal individualism increases by one point then there is an increase of .114 points of competence satisfaction.

Table 9

*Regression model: Need satisfaction predicting well-being by Nationality*

	Dutch, N = 22				Greek, N = 22			
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )
Well- Being								
Autonomy Satisfaction	.629	.206	3.058	.006	.591	.219	2.705	.014
Relatedness Satisfaction	.656	.279	2.351	.030				
Competence Satisfaction								
	F(2, 19) = 14.154, $p = .000$ , $R^2_{adj} = .556$				F(1, 20) = 7.32, $p = .014$ , $R^2_{adj} = .231$			

Note: blank cells exist because the stepwise method did not include the independent variable in the model

To examine how strongly the basic psychological needs predict well-being, a stepwise linear regression model was done with well-being as the dependent variable and the three dimensions of need satisfaction as the independent variables. As we can observe in Table 9, for the Dutch sample autonomy satisfaction ( $b = .629, p = .006$ ) and relatedness satisfaction ( $b = .656, p = .030$ ) were statistically significant predictors of well-being. This means that when there is an increase of one point either of autonomy satisfaction or relatedness satisfaction well-being increases by .629 and .656 units respectively. Furthermore, for the Greek sample autonomy satisfaction ( $b = .629, p = .006$ ) was a statistically significant predictor of well-being, which means that one-point increase of autonomy satisfaction then well-being increases by .591 points.

Table 10

*Regression model: Need frustration predicting well- being by Nationality*

	Dutch, N = 22				Greek, N= 22			
	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>p</i> ( $\beta$ )
Well- Being								
Autonomy Frustration					-.513	.592	-3.281	.004
Relatedness Frustration								
Competence Frustration	-.517	-.465	-2.348	.029				
	F (1, 20) = 5.5, $p=.029$ . $R^2_{adj} = .177$				F (1, 20) = 10.8, $p = .004$ . $R^2_{adj} = .317$			

Note: blank cells exist because the stepwise method did not include the independent variable in the model

Moreover, a stepwise linear regression model was done with well – being as the dependent variable and autonomy, relatedness and competence frustration as the independent variables for each of the matched samples (Greek, N=22; Dutch, N=22). For the Dutch sample, only competence frustration ( $b = -.517, p=.029$ ) was a significant predictor of well- being. This means that when there is an increase of one point of competence frustration, well- being decreases by .517 and units respectively. Furthermore, for the Greek sample, autonomy frustration ( $b = -.513, p=.004$ ) statistically significantly predicted well- being, which means that with one- point increase of autonomy frustration then well- being decreases by .513 points.

## Discussion

The objective of the present study was to examine whether the norms for basic needs differ across cultures, and whether higher norms for basic needs are also related to the experience of more well-being or whether the experience of well-being is relative to the norm. Thus, this research tried to investigate the assumptions of the SDT in two cultural contexts that differ in social values and economic growth, Greece and The Netherlands, in order to test the universality of its assumptions, Greece and the Netherlands.

The first aim of this paper was to examine the relationship of the basic psychological needs with adolescents' well-being in general. We hypothesized that the satisfaction of the basic psychological needs predicts well-being in our sample and that need frustration is related with lower levels of well-being. In line with SDT, our findings showed that the satisfaction of all basic psychological needs is linked to well-being in the adolescents of our sample.

SDT suggested that needs are innate and organismic necessities rather than motives or desires. (Deci & Ryan, 2000; Ryan, 1995). Need satisfaction which comes as a result from contextual need support in settings such as family, education, and work affect ongoing well-being and optimal functioning in our sample. However, SDT suggested that when these needs get thwarted in controlling, critical or rejecting contexts, maladjustment and even psychopathology is said to result (Ryan & Deci, 2000; Vansteenkiste & Ryan 2013). Interestingly, we found that, regarding needs frustration, only the frustration of autonomy and competence were related to well-being in our sample. Relatedness frustration, which is the frustration of the need for connection and love, did not predict well-being negatively. These results go beyond previous reports, showing that need satisfaction and need frustration are two different constructs. Although need frustration involves need satisfaction, low need satisfaction may not necessarily involve need frustration. This means that if the basic psychological needs stay unfulfilled, this may not be related with malfunctioning as much as frustrated needs may do (Bartholomew et al., 2011; Vansteenkiste & Ryan, 2013).

We further expected that cultural differences in terms of horizontal and vertical individualism and collectivism might affect the cultural norms for basic needs, and that The Netherlands and Greece would differ in this respect. We

hypothesized that Greek adolescents would think more vertically collectivistic, which refers to seeing the self as a part of a collective and being willing to accept hierarchy and inequality within that collective, though Dutch adolescents were expected to have higher scores on Horizontal Individualism, which is seeing the self as part of a collective but perceiving all the members of that collective as equal (Triandis & Gelfand, 1998; Hofstede, 2001; Singelis et al., 1995). As socioeconomic status might interfere with differences in values, and Greece experiences an economic recession, we also tested this hypothesis on samples matched for SES and other aspects. However, although Greek participants had significantly higher scores than Dutch in the Vertical Collectivism dimension, no significant differences were found in Individualism. Although Collectivism and Individualism are considered as opposite to each other, we did not find significant differences between the two samples in Individualism. Thus, it seems like these two values may coexist in the people's mindset or they must be considered differently within different people. Also, the small size of our sample may not be able to provide a representative picture of the cultural practices of each group. We then examined whether cultural practices predict specific needs' satisfaction. We hypothesized that autonomy satisfaction would be predicted by individualistic cultural practices, while relatedness would have been predicted by collectivism, as previous research has suggested (Oishi, 2001; Hofstede 1980; Singelis et al., 1995). However, no relationship between autonomy and individualism was found, replicating the claim that autonomy and individualism are different constructs (Ryan, 1993; Kagitcibasi, 1996). Though, it was noted that Horizontal Collectivism predicted relatedness satisfaction, as we expected.

Most important to the question of universality, we examined the mechanism of SDT for Dutch and Greek adolescents separately. Our hypothesis was that Dutch adolescents would show higher autonomy satisfaction and Greek adolescents higher relatedness satisfaction, which would have similarly predicted their well-being, mostly based on our cultural assumptions regarding the impact of individualism and collectivism on needs (Oishi, 2001; Hofstede 1980; Singelis et al., 1995). We found that Dutch and Greek adolescents did not differ in terms of need satisfaction or wellbeing. However, we did find differences in terms of the basic needs related to wellbeing for both samples. Our hypothesis that autonomy would predict well-being in the Dutch participants and relatedness in the Greek, was not confirmed, although both samples did show slightly different patterns. Therewith, autonomy satisfaction



predicted well-being in both the Greek and Dutch participants, while relatedness significantly predicted well-being in the Dutch only. Our results supported the concept of universality of autonomy, that previous research has highlighted. Although it was found that relatedness is predicted by Horizontal Collectivism, in the comparison between the two cultural groups we found that it was important only for the Dutch adolescents' well-being, in contrast to what was expected. Besides, relatedness frustration did not predict lower levels of well-being in either sample. Thus, in our study's results relatedness was not found to be universal. Surprisingly, relatedness satisfaction and frustration were not important for Greek adolescents' well-being. A possible explanation could be that in Greece, where family and loyalty within family is something very important adolescents take relatedness for granted from their families and the focus for their happiness on the sense of volition and autonomy instead. Especially because they are in the stage of autonomy development. Relatedness satisfaction was proved important for Dutch adolescents, something that may depict the need for connection and love in individualistic societies in which loneliness is often an issue. However, our findings do not concur with this explanation as we did not find that Dutch participants think more individualistic than Greek. Finally, it can be noted that competence satisfaction did not predict well-being in any of our groups, though competence frustration was shown to predict lower levels of well-being in the Dutch participants. However, more research is needed to examine the importance and universality of competence more explicitly.

In cultural relativism, human nature is perceived as a social construction, whereby goals, needs and values differ across cultures, and these differences predict optimal functioning and well-being (Su, Tay, Diener, 2014). However, SDT suggests that individual's well-being is universally dependent on the satisfaction of the three needs. Previous studies have doubted the universality of relatedness and competence (Baumeister & Leary, 1995; Deci & Ryan, 1985), but the main interest and the primary controversy has concerned the need for autonomy. For example, some cross-cultural studies (Iyengar & Lepper, 1999; Markus & Kitayama, 1991; Oishi, 2001) have questioned the value of autonomy in collectivistic countries as Greece and they have suggested that in those societies relatedness would be more valued. Though, it has been claimed that these studies have identified autonomy with individualism or independence (Ryan, 1993; Kagitcibasi, 1996). SDT researchers have differentiated independence from autonomy and they state that independence refers to a situation

that one does not rely on others, while autonomy concerns the sense of volition or endorsement one's actions and goals (Ryan, Deci, & Grolnick, 1995; Ryan & Lynch, 1989). Similarly, SDT separates individualism from autonomy, suggesting that people can be autonomously interdependent or collectivistic or autonomously individualistic, which depends on how deeply the cultural values of its practice are internalized (Chirkov et al., 2003). Also, it has been claimed that autonomy is not antithetical to relatedness, which means that both autonomy and relatedness can be equally volitional, and that cultural practice does not make such difference. According to previous studies, that means that a person can be high in both autonomy and relatedness, (Kagitcibaci, 2005; Kagitcibaci, 2013; Markus & Kitayama, 2003). Thus, this study is in line with these ideas of SDT researchers, as we found that individualistic practices does not predict autonomy satisfaction, that there are no differences in autonomy between individualistic and collectivistic cultures, but autonomy satisfaction predicts well-being in both our samples.

The main limitation of the present study is the small sample, especially for the Dutch participants that cannot allow us to yield robust results and make valuable comparisons. Moreover, it is possible that our samples are not representative of each society. At least, our Greek sample is not representative, as the differences in economic resources and educational level are not prevalent in the present study. It is important for future research on the universality of SDT and well-being to include participants of different socioeconomic backgrounds and from different places of each country. In our case most participants were from urban cities and in Greece, most participants were from Athens, which is the capital and may be considered as the most individualistic city of Greece. Moreover, future studies should examine cultural differences by measuring how people integrate those practices and how they consider individualism and collectivism in their personal lives. An additional apparent limitation of the study is that the data collection was not culturally sensitive, as the questionnaires were not translated into the native language of the participants, but in English, something that may have affected adolescents' answers. This study must be considered as a pilot study for other studies in cross-cultural psychology.

To conclude, the aim of this research was to examine how need satisfaction or frustration is linked to well-being in a sample of adolescents with different cultural backgrounds and economic resources. More specifically, this study investigated the

correlation between needs satisfaction and well-being in a sample of Greek and Dutch adolescents that were matched for age, gender, and SES. We found that, irrespective of their circumstances, levels of basic need fulfillment and wellbeing were similar for both groups, but that their wellbeing appeared to depend on different needs. While both groups derived well-being from the experience of autonomy, Dutch rather than Greek adolescents were also affected by a need for relatedness. Moreover, while frustration of their sense of competence mostly affected the wellbeing of Dutch adolescents, frustration of their sense of autonomy was most important to the wellbeing of Greek adolescents. In sum, both universality and subtle contextual differences in the relative importance of basic needs fulfillment are apparent. For both groups, basic needs were meaningful, equally present and related to wellbeing. However, the finding that levels of basic needs and wellbeing were comparable, but that their relevance to wellbeing differed across cultures suggests that basic needs are relative to some sort of norm after all. Their universality appears weighted according to context.

Finally, even though research is still limited it has been well depicted that the three psychological needs are fundamental for optimal functioning. Therewith, it is important to start acting towards these needs through our cultural and social institutions. As it is shown at least autonomy is optimal for humans' well-being. Regarding adolescents a more autonomy focused approach in parenting, education and other areas is suggested to be adopted. The satisfaction of these needs may be a step to more fulfilled lives, lived by individuals with high levels of well-being.

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