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RESEARCH PAPER

Does Psychological Need Satisfaction Matter When Environmental or Financial Safety are at Risk?

Beiwen Chen · Jasper Van Assche · Maarten Vansteenkiste · Bart Soenens · Wim Beyers

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Abstract Grounded in self-determination theory, the present study addressed the question whether the relation between satisfaction of the psychological needs for relatedness, competence, and autonomy and well-being would be constrained by satisfaction of the need for safety. In Study 1, we investigated environmental safety in a sample of young adults ($N = 224$) in South Africa, a country known for its low public safety. In Study 2, we focused on financial safety within a socio-economically deprived adult Chinese sample ($N = 357$). Although safety satisfaction yielded a positive relation to well-being in both studies, satisfaction of the psychological needs contributed to well-being above and beyond safety satisfaction and its contribution was not dependent upon the level of safety satisfaction. Further, across both studies, individuals high in safety satisfaction desired less psychological need satisfaction. Supplementary analyses in Study 2 indicated that whereas financial safety yielded a positive relation to well-being, materialism yielded a negative association. Together, these results point to the important role of basic psychological need satisfaction beyond safety satisfaction in the prediction of well-being.

Keywords Safety · Basic psychological need satisfaction · Need desire · Well-being · Self-determination theory

1 Introduction

Do human beings need certain basic psychological nutrients to be mentally healthy, just like plants need air, water, and sunshine to grow? Psychologists have intensively discussed

Beiwen Chen and Jasper Van Assche are listed in alphabetical order though both authors contributed equally to this research and therefore share the first authorship.

B. Chen (✉) · J. Van Assche (✉) · M. Vansteenkiste · B. Soenens · W. Beyers
Henri Dunantlaan 2, 9000 Ghent, Belgium
e-mail: Beiwen.Chen@UGent.be

J. Van Assche
e-mail: Jasper.VanAssche@UGent.be

and investigated the number and type of needs critical for human well-being (e.g., Baumeister and Leary 1995; Maslow 1954; McClelland 1965; Ryan and Deci 2000). During the last decade, the concept of psychological needs has received increasing attention, mainly due to accumulating empirical evidence for *Basic Psychological Needs Theory* (BPNT), one of the five mini-theories of *self-determination theory* (SDT; Ryan and Deci 2000; Vansteenkiste et al. 2010). BPNT specifies three fundamental psychological needs—relatedness, competence, and autonomy—that, when satisfied, would promote well-being and psychological growth. Dozens of studies in a variety of life domains, cultural contexts and among diverse age groups and populations have provided evidence for this claim, suggesting that the satisfaction of these three needs is indeed essential for human growth (Deci and Ryan 2000).

Nevertheless, there could be other needs that matter on top of the psychological needs articulated in SDT. For instance, some scholars have posited a need for self-esteem (e.g., Pyszczynski et al. 2004), a need for popularity-influence (Derber 1979), or a need for safety or security (e.g., Kasser 2002; Maslow 1943). The present study focused on the interplay between SDT's psychological needs and the need for safety, which can be broadly defined as the need to feel safe from environmental threats and to perceive oneself as having sufficient material resources to ensure basic survival (Maslow 1943). Although a need for safety has been posited at the theoretical level, only few studies have examined the role of safety satisfaction in the prediction of psychological well-being, either by itself or in combination with other needs (Maslow et al. 1945; Sheldon et al. 2001; Tay and Diener 2011). Moreover, few studies, if any, have explored the interplay between psychological need satisfaction and safety satisfaction in predicting well-being in contexts where safety satisfaction is relatively threatened.

In the present study, we examined the relative contribution of psychological need satisfaction and safety need satisfaction in the prediction of individuals' well-being. In addition, we examined the moderating role of safety need satisfaction, that is, we considered the possibility that psychological need satisfaction matters *only* when the safety need has been satisfied. We focused on two aspects of safety, that is, environmental safety (Study 1) and financial safety (Study 2). We studied both aspects in samples in which the need for safety is known to be more at risk according to objective criteria (i.e., South African students and Chinese adults from poor rural areas, respectively).

1.1 Basic Psychological Needs

Within BPNT, basic psychological needs are considered innate and universally essential nutriments for well-being (Ryan and Deci 2000). The assumption of the existence of basic psychological needs is founded in SDT's organismic-dialectical meta-theory, in which humans are conceived of as active, growth-oriented organisms equipped with an inherent integrative tendency (Ryan and Deci 2000; Vansteenkiste et al. 2010). Satisfaction of the basic psychological needs for relatedness, competence, and autonomy is said to energize the internalization process and to contribute to psychological health and growth. In contrast, need frustration is said to elicit defensiveness, psychological insecurity, ill-being, and even psychopathology (Ryan and Deci 2000; Vansteenkiste and Ryan 2013).

Satisfaction of the need for relatedness involves feeling genuinely cared for and loved by significant others rather than feeling lonely and alienated (Baumeister and Leary 1995; Deci and Ryan 1985). Competence refers to the experience of effectiveness in interacting with one's environment and is contrasted with experiences of inferiority and inadequacy (Deci and Ryan 2000). Autonomy refers to experiences of volition and self-endorsement as

opposed to feelings of coercion and pressure (deCharms 1968; Ryan and Connell 1989; Ryan and Deci 2006).

Consistent with BPNT, numerous studies have provided support for a link between psychological need satisfaction and a variety of well-being outcomes (e.g., vitality, life satisfaction), behavioral outcomes (e.g., persistence, performance) and relational outcomes (e.g., secure attachment) across a variety of life domains, including parenting, education, work, health care, and psychotherapy (for reviews see Ryan and Deci 2000; Vansteenkiste et al. 2010). Further, testifying to the universal importance of need satisfaction, several cross-cultural studies showed that satisfaction of all three needs relates positively to well-being across cultures (Chirkov et al. 2011). For instance, Chen et al. (2014) showed that psychological need satisfaction related positively to well-being across four countries (i.e., Belgium, China, Peru and the US), regardless of whether people desire to get the need met or not.

In addition to examining the importance of psychological need satisfaction across life domains, cultures, and interpersonal differences in desired need satisfaction, another way to test the importance of the psychological needs is by examining whether their contribution to well-being is constrained by another need, such as the need for safety. In other words, does satisfaction of the psychological needs relate to well-being even when the need for physical safety is threatened and/or is the effect of psychological need satisfaction dependent upon satisfaction of the need for physical safety?

1.2 The Interplay Between Physical Safety and Psychological Need Satisfaction

Maslow (1954) defined safety as the need to prevent risks to physical sustenance and survival. Although he did not define or categorize different forms of physical threats very precisely, he provided a few illustrative cases. For instance, he referred to the need to feel protected from physical harm and threats imposed by the environment (e.g., "crimes and nature disasters", p. 87), which can be labeled 'environmental safety'. Further, he described safety as the need to have sufficient material resources for basic survival (e.g., a basic salary and pension after retirement) and as the need to avoid poverty. We will refer to this need as 'financial safety'.

Moreover, Maslow (1943) maintained that striving for physical safety may lead people to overlook their psychological needs. Specifically, based on his hierarchical need model, he argued that "the appearance of a need rests on other prepotent needs; needs or desires must be arranged in hierarchies of prepotency" (p. 91). Because he posited the need for safety at a lower level in the hierarchy, people's functioning may become dominated by the pursuit of safety need satisfaction as long as the safety need remains unfulfilled. Said differently, the potency of the higher-level psychological needs may get reduced if the lower-level needs are not satisfied.

Although Maslow did not propose very specific predictions about the interplay between psychological needs and the need for safety, one way to interpret his hierarchical model is that the safety need is more *fundamental* when compared to the psychological needs, as the latter needs are situated higher up in the hierarchy. Thus, from a hierarchical viewpoint, the effect of psychological need satisfaction may be constrained by deprivation of safety satisfaction. Technically, the constraining role of physical safety may manifest in two ways. First, the effect of psychological need satisfaction may drop to zero when controlling for physical safety satisfaction. Second, individuals deprived from safety satisfaction may not benefit from the satisfaction of higher-level psychological needs as much as those who

have satisfied their safety need, suggesting that safety plays a moderating role in the association between psychological need satisfaction and well-being.

Tay and Diener (2011) recently examined the interplay between satisfaction of the psychological needs and the need for safety. They showed in a large cross-national survey comprising 123 samples that satisfaction of the psychological needs central to SDT yielded a fairly independent association with subjective well-being above the contribution of satisfaction of safety and other needs. Further, they did not find systematic evidence for an interaction between safety and psychological need satisfaction in the prediction of well-being.

The present study aims to build on this work in terms of the samples being recruited, the scales used, and the type of hypotheses examined. First, we deliberately collected data in two samples with a substantial likelihood of being at risk for safety threats. The rationale for this approach is that a reliance on such relatively at-risk samples allows for a more conservative test of the supplementary role of psychological need satisfaction. Specifically, because safety has been proposed as a deficiency need that becomes especially salient in situations of deprivation (Maslow 1954), the deprivation of safety is particularly likely to undermine the predictive value of psychological need satisfaction in at-risk samples.

Second, we made use of a recent measure of psychological need satisfaction that was validated cross-culturally and that was shown to display measurement equivalence across countries (Chen et al. 2014). The assessment of safety and psychological need satisfaction in the study by Tay and Diener (2011) was rather limited, as they made use of data collected as part of the Gallup's World Survey. For instance, a limited number of items per need was used, a categorical rather than a Likert-answering format was used, and no evidence regarding the reliabilities of the scales was reported.

Third, content-wise, we attempted to test Maslow's model in yet another way. Specifically, we examined whether individuals deprived from satisfaction of a lower-level need would express a lowered *desire* for satisfaction of higher-level needs. As they are preoccupied with the pursuit of more proponent needs, they would have less energy available to pursue satisfaction of higher order needs. Given the dearth of studies addressing this issue, we examined whether safety need deprivation would relate negatively to the desire to get the psychological needs met. These issues were examined with respect to two facets of safety, that is, environmental and financial safety.

1.2.1 Environmental Safety

In most Western cultures, the peaceful and stable societal climate guarantees that citizens feel relatively safe from criminal assault, tyranny, and exploitation. Still, in other societies, the need for environmental safety can be an active motivator which becomes salient especially in times of deprivation (Maslow 1954; McHale and McHale 1978; Sheldon et al. 2001). Living in an unsafe environment without protection—where delinquency, corruption, violence, and lawlessness threaten people's personal security—was found to be detrimental to life satisfaction in several studies (e.g., Lelkes 2006; Shields and Wheatley Price 2005). In light of such findings, we expected that the subjective appraisal of environmental safety would relate positively to well-being. We focused on individuals' subjective appraisal of safety because there is not a simple one-by-one relation between living in an objectively unsafe environment and feeling unsafe. That is, people living in a neighborhood with high crime rates may differ in the extent to which they feel unsafe (see e.g., Van Assche et al. 2014).

1.2.2 Financial Safety

Few people would doubt that humans require some material necessities to feel safe (Kasser 2002; Maslow 1954) and several strands of research suggest that financial safety is indeed critical for people's well-being. For instance, people's financial status—as indexed by their objective income—is associated positively with well-being and this relation is more pronounced in poor, relative to wealthier, countries (Diener et al. 1999; Oishi et al. 1999). Presumably, money is especially critical for well-being when it helps to avoid poverty and to sustain material resources for basic survival (Diener and Seligman 2004; Veenhoven 1991). Further evidence for the contribution of financial safety to well-being comes from studies showing that financial deprivation is associated with lower well-being in a poverty context (Christoph 2010; Whelan 1992). Together, these studies suggest that financial safety, as a subjective appraisal of whether one has sufficient money available for basic sustainability, is critical for psychological well-being.

1.3 The Present Study

The present study investigates the interplay between satisfaction of the psychological needs for relatedness, competence, and autonomy and satisfaction of the need for physical safety in the prediction of well-being. The following three hypotheses were examined in both Study 1 and Study 2, which focused on environmental safety and financial safety, respectively. First, we examined whether psychological need satisfaction would yield an incremental contribution to well-being beyond safety need satisfaction in samples that are relatively at risk for safety deprivation. Given the presumed universal and essential character of the psychological needs (Ryan and Deci 2000), we hypothesized that psychological need satisfaction would yield a unique contribution to the prediction of well-being beyond safety satisfaction (Hypothesis 1).

Second, we examined whether individuals who experience less safety need satisfaction would benefit less from psychological need satisfaction. One possible interpretation of Maslow's hierarchical need model suggests that, among individuals who experience more physical safety deprivation, the functional importance of psychological need satisfaction would be reduced, such that they would benefit less or not at all from the satisfaction of psychological needs. On the other hand, if these psychological needs are really crucial and basic, as proposed in SDT, one would reason that psychological need satisfaction contributes to well-being, irrespective of the level of safety need satisfaction. Thus, we hypothesized that the associations between psychological need satisfaction and well-being would not be dependent upon (i.e., moderated by) environmental or financial safety need satisfaction (Hypothesis 2).

Third, we explored the association between safety need satisfaction and the desire for more satisfaction of the three psychological needs. Following Maslow's hierarchical model of needs, we examined whether a lack of safety need satisfaction would relate negatively to the desire for psychological need satisfaction (Hypothesis 3).

2 Study 1

Study 1 focused on the role of environmental safety in South Africa, a country known for its high rates of criminality and violence (e.g., Demombynes and Özlerb 2005), as shown for instance in the high incidence of rape (e.g., Jewkes and Abrahams 2002). South

Africans reported feeling fairly unsafe on the streets, especially after sunset and when using public transport in the cities (Ferreira and Harmse 2000; George 2003). Further, the high incidence of household violence, parental alcoholism, and child abuse indicate that the need for environmental safety is often threatened within the family context too (Le Roux 1996). In light of these facts, South Africa seemed an ideal case to examine the questions (a) whether psychological need satisfaction would matter in the prediction of well-being above and beyond the level of experienced environmental safety and (b) whether the effect of psychological need satisfaction would be moderated by the level of safety satisfaction.

2.1 Method

2.1.1 Participants and Procedure

A total of 224 South African young adults (54.0 % males; *M* age = 24.13, *SD* = 4.25) participated in this study. We sampled students from different institutions: two universities (74.1 %) and one college (25.8 %). The ethnic distribution was as follows: 57.6 % African, 28.6 % Caucasian, 8.9 % Coloured (i.e., people of mixed race) and 4.9 % Asian. This distribution deviates somewhat from the total population (CIA World Factbook 2013). Specifically, Caucasians were overrepresented and Africans were underrepresented, which is likely due to the sampling of university students.

As for living area, 47.8 % of the participants came from urban areas in the Gauteng Province, 24.1 % from rural areas and 28.1 % from township areas around Pretoria, the executive capital city. Relative family income was assessed with a five-point scale asking participants to compare their family income with the average income level of the country. Participants also had the option to keep this information private. The scores for income largely followed a normal distribution. Thirteen percent of the participants reported their monthly family income to be much below average level of the country, 26.8 % below the average of the country, 23.2 % around the average, 17.8 % above average, 3.1 % much above the average country level, and 16.1 % chose not to divulge this information. Students filled out the questionnaires in the classroom. Prior to completing the questionnaires, an investigator explained the purpose of the study and guaranteed anonymity to the students.

2.1.2 Measures

All questionnaires were administered in English, the working language in the participating universities and college. Unless indicated otherwise, items were rated on a 5-point Likert scale, ranging from 1 ("*Completely Untrue*") to 5 ("*Completely True*").

2.1.2.1 Basic Psychological Need Satisfaction To assess basic psychological need satisfaction, we used the Basic Psychological Needs Scale-Revised (BPNS-R), which was recently validated across four countries (i.e., Peru, China, US, Belgium; Chen et al. 2014). The BPNS-R consists of three subscales pertaining to the three needs identified in SDT, with each need being assessed with eight items, consisting of a balanced combination tapping into both satisfaction (e.g., "I feel the people I care about also care about me"; "I feel competent to achieve my goals"; "I feel my decisions reflect what I really am") and frustration (e.g., "I feel excluded from the group I want to belong to"; "I feel disappointed

with many of my performances"; "I feel forced to do many things I wouldn't choose to do"). In the present sample, Cronbach's alpha of competence was .80. Because the relatedness and autonomy scales initially showed a somewhat lower reliability, we removed one item from the relatedness scale and two items from the autonomy scale. This resulted in Cronbach's alphas of .74 and .80, respectively.

2.1.2.2 Environmental Safety To assess environmental safety, we used three items developed by Sheldon et al. (2001) and slightly adjusted them to fit the purpose of this study. The items read "I feel safe from threats and uncertainties", "I feel my life is reliable and predictable" and "I feel my social environment offers a reliable and comfortable set of routines and rules". Cronbach's alpha was .66.

2.1.2.3 Need Desire To assess the desire to get one's psychological needs met, we used the Psychological Needs as Motive scale (Sheldon and Gunz 2009). Before rating each item, respondents read the following question: "If you would have a chance to make changes in your life, how much would you like to have the following changes?". Then, respondents rated nine items, three for each need (e.g., "You manage to feel more liked and accepted by those you care about, and to feel less separation from them"; "You manage to become better at some activity that is important to you, and to feel less inept and incompetent"; "You manage to create a life style where others no longer pressure you, and where you feel free to do what you really want to do"). Each item was rated on a five-point Likert-type scale ranging from 1 ("*No desire for this change*") to 5 ("*Much desire for this change*"). Because reliabilities for the subscales were low, we calculated the total scale score for psychological need desire, resulting in a reliable index ($\alpha = .85$).

2.1.2.4 Psychological Well-Being Well-being was measured by four indexes, namely life satisfaction, depressive symptoms, vitality and self-acceptance, which have been widely used in previous cross-cultural studies (e.g., Oishi et al. 1999; Wissing and van Eeden 2002). Life satisfaction was measured with the Satisfaction with Life Scale (Diener et al. 1985; $\alpha = .75$). Vitality, tapping into feelings of energy and vigor over the past few months, was assessed with the Subjective Vitality Scale (Ryan and Frederick 1997; $\alpha = .81$). Self-acceptance, which involves a positive attitude towards oneself and the past, was measured with nine items from the Psychological Well-being Scale (Ryff 1989; $\alpha = .74$). Depressive symptoms were assessed with the Centre for Epidemiological Studies-Depression (CES-D) scale (Radloff 1977; $\alpha = .82$). An Exploratory Factor Analysis with principal-axis method on these four well-being indicators showed clearly that they loaded on one single factor. Thus, we *z*-scored the four scales and after reverse coding the items for depression, the scales were averaged to form a composite score of well-being (Kaplan et al. 1998).

2.2 Results

2.2.1 Preliminary Analyses

First, we explored associations between relevant background variables and outcomes. We ran a MANCOVA including gender, age, institution type (i.e., university or college), ethnicity, living area and family income as independent variables and with the study variables as outcomes. Gender [F (6, 125) = 3.78, $p = .002$, $\eta^2 = .15$] and institution

type [F (6, 125) = 5.89, $p < .001$, $\eta^2 = .22$] had a significant multivariate effect on the study variables. Subsequent univariate ANOVAs showed that females reported more relatedness satisfaction ($M = 4.30$, $SD = 0.67$) and well-being ($M = 3.91$, $SD = 0.65$) than males ($M = 4.16$, $SD = 0.61$ and $M = 3.78$, $SD = 0.52$, respectively). With regard to institution type, college students reported higher levels of environmental safety satisfaction ($M = 3.86$, $SD = 0.85$), relatedness satisfaction ($M = 4.54$, $SD = 0.66$), competence satisfaction ($M = 4.47$, $SD = 0.52$), autonomy satisfaction ($M = 3.84$, $SD = 0.66$) and well-being ($M = 4.10$, $SD = 0.41$), compared to university students ($M = 3.44$, $SD = 0.89$; $M = 4.17$, $SD = 0.46$, $M = 4.06$; $SD = 0.61$, $M = 3.43$; $SD = 0.66$; and $M = 3.76$, $SD = 0.60$, respectively).

Table 1 shows the means and standard deviations of the study variables and their correlations. Environmental safety satisfaction was positively correlated with satisfaction of all three psychological needs and with well-being, but was unrelated to the desire for psychological need satisfaction. Safety satisfaction and satisfaction of each of the three psychological needs related positively to the composite well-being score, while need desire was unrelated.

2.2.2 Main Analyses

To examine our first two hypotheses, we performed a hierarchical regression analysis. In Step 1, we entered the background variables that yielded a significant multivariate effect (i.e., gender and institution type). In Step 2, we added environmental safety and in Step 3, we added the three psychological needs to examine whether they would relate to well-being above the contribution of environmental safety (Hypothesis 1). In Step 4, we added the three two-way interactions between psychological need satisfaction and safety satisfaction to investigate whether the relations between the satisfaction of the three psychological needs and well-being would depend on the perceived satisfaction of environmental safety (Hypothesis 2). The three interaction terms were created by multiplying the z-scored variables of safety satisfaction and psychological need satisfaction.

The results can be found in Table 2. In Step 2, environmental safety satisfaction was significantly related to higher well-being. Adding the three psychological need satisfaction measures in Step 3 resulted in an increase in explained variance of 21 % up and above the contribution of environmental safety satisfaction, with all three needs being uniquely positively related to well-being. Interestingly, the association between environmental safety satisfaction and well-being diminished but remained significant when psychological need satisfaction was added to the equation. Finally, none of the three interaction terms

Table 1 Correlations among study variables in the South African student sample (Study 1)

Measure	Mean	*SD*	1	2	3	4	5
1. Environmental safety	3.55	0.89					
2. Relatedness satisfaction	4.23	0.66	.42***				
3. Competence satisfaction	4.21	0.63	.35***	.52***			
4. Autonomy satisfaction	3.51	0.89	.32***	.55***	.55***		
5. Psychological need desire	3.31	0.95	−.13	−.12	−.13	−.08	
6. Composite well-being	3.83	0.60	.61***	.64***	.58***	.64***	−.10

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 Hierarchical regression analysis predicting well-being by background variables, environmental safety, psychological need satisfaction and interactions (Study 1)

	Step 1	Step 2	Step 3	Step 4
Gender (1 = male)	−.21**	−.23***	−.13**	−.14**
Institution type (1 = college)	.47***	.35***	.14**	.15**
Environmental safety (ES)		.57***	.34***	.34***
Psychological need satisfaction				
Relatedness satisfaction			.24***	.23***
Competence satisfaction			.14**	.15**
Autonomy satisfaction			.27***	.26***
Interactions				
Relatedness × ES				−.04
Competence × ES				.02
Autonomy × ES				−.01
ΔR^2	.16***	.31***	.21***	.00

* $p < .05$; ** $p < .01$; *** $p < .001$. $N = 207$

added in Step 4 were significant, suggesting that the associations between psychological need satisfaction and well-being are not dependent upon satisfaction of environmental safety.

To examine whether interindividual differences in safety satisfaction would relate to the desire for psychological need satisfaction (Hypothesis 3), we conducted a hierarchical regression analysis, thereby regressing the desire for psychological need satisfaction on environmental safety and the background variables. Environmental safety tended to relate negatively to desire for psychological need satisfaction ($\beta = -.13$, $p = .06$).

2.3 Brief Discussion

Study 1, which was conducted in an at-risk sample of South-African students, provided initial evidence for Hypothesis 1 by showing that satisfaction of the three psychological needs contributes to well-being, even beyond the contribution of environment safety satisfaction. Moreover, the results supported Hypothesis 2 by showing that the links between psychological need satisfaction and well-being did not depend on satisfaction of environmental safety. Finally, we explored the relation between environmental safety satisfaction and desire for more psychological need satisfaction. Maslow (1954) proposed that individuals deprived in the satisfaction of physical needs would express a lower desire for the satisfaction of psychological need. However, our data did not support this hypothesis, as they suggest that when these South Africa students experience lower safety satisfaction, they tend to desire more (rather than less) satisfaction of the psychological needs.

3 Study 2

Study 2 extended Study 1 in two ways. First, we tested our three main hypotheses in the context of another facet of the safety need, that is, financial safety. To investigate the issue of financial safety, we selected a Chinese migrant worker sample whose financial safety

was relatively at risk. These migrants come from rural areas to work in the Shanghai area and are named "Mingong" (migrant labor workers). This population is part of the cheap Chinese labor market and previous studies provided evidence for their inferior socio-economic conditions, as indicated by low wages and high poverty (e.g., Guo and Cheng 2010). Because of the strict administration system in cities, only 10 % of this population benefits from social welfare protection such as health insurance and a pension program. These migrant labor workers are the first to lose their job during an economic crisis (Lu et al. 2011). Clearly, this migrant group is in a poor financial situation and lives near the safety breadline. In Shanghai, the most expensive city in mainland China and one of the most expensive cities in the world (Mercer's Cost of Living Survey 2012), the financial pressure to survive could be even bigger.

Second, a question that arises when studying the concept of financial safety is how this notion is related to the concept of materialism. Both concepts share a focus on the attainment of material resources. Materialism has received quite some research attention, both in SDT (Kasser 2002) and in consumer literature (e.g., Belk 1985). The association between financial safety and materialism is an important issue to address because the pursuit of materialism has been found to relate negatively to well-being (e.g., Vansteenkiste et al. 2008), while we hypothesize financial safety to relate positively to well-being. In our view, financial safety and materialism are conceptually distinct. There is a consensus that materialism reflects the importance a consumer attaches to expensive and luxurious possessions in life (Ahuvia and Wong 1995; Belk 1985; Richins 1994). As such, the type of resources aspired and the underlying motivation for seeking these resources seem to be differ between financial safety and materialism. Whereas financial safety involves the pursuit of sufficient resources to protect oneself against poverty, materialistic attainment involves buying luxurious goods to show off to others and to validate one's ego (Kasser 2002).

In a set of supplementary analyses, we explored whether financial safety satisfaction and materialistic attainment have distinct and differential associations with well-being. We hypothesized that materialistic attainment, in contrast to financial safety satisfaction, would relate negatively to well-being, presumably because it fails to bring about psychological need satisfaction (Kasser et al. 2004; Vansteenkiste et al. 2006). Shanghai is also an interesting area to examine the effect of materialism. As suggested by Belk (1985), materialism is not the "sole province of Americans". A materialistic orientation could be highly prevalent in a city like Shanghai which is heavily influenced by Western culture (Chen 2007).

3.1 Method

3.1.1 Participants and Procedure

We accessed a sample of migrant workers through a school which specifically targets rural migrant children. Because most migrants are not registered officially, their children cannot enter public city schools unless they pay an extra city-education endorsement fee (Liang and Chen 2007). To avoid this, parents typically bring their children to a migrant children school set up by the municipal government and the migrant community. We went to the schools and explained to the students that we wanted to do an anonymous survey among their parents. Students took home an envelope with the questionnaires inside and an instruction sheet explaining the purpose of the study in detail. Students brought back the sealed envelope with the completed questionnaires the following morning. Through this

procedure anonymity was guaranteed. Considering the relatively low educational level of the targeted sample, we explained to the students that if their parents had difficulties reading or understanding the questionnaire, they did not need to hand in the survey. We received 357 valid questionnaires out of 394 distributed ones (i.e., a 90.6 % response ratio).

Forty-eight percent of the sample was male and the mean age was 40.08 years ($SD = 3.18$). Monthly objective family income was assessed with a six-point scale indicating different amounts of income. Nine and a half percent reported a monthly family income lower than 1,500 Yuan, 19.8 % reported an amount between 1,500 to 2,500 Yuan, 21.5 % between 2,500 to 4,000 Yuan, 20.3 % from 4,000 to 5,500 Yuan, 18.4 % between 5,500 to 8,000 Yuan and 10.5 % reported an income above 8,000 Yuan, which is close to the average monthly family income in Shanghai. In sum, almost 90 % of the participants had an income lower than the average family income in Shanghai. Of all participants, 4.7 % had a university degree, 63.8 % had a high school degree and 31.5 % only finished primary school education.

3.1.2 Measures

Some of the measures used in this study (such as the BPNS-R and most of the well-being scales) were already available and validated in Chinese (Chen et al. 2013). Other measures were translated into Chinese by a Chinese researcher fluent in English. The back-translations were done by an English-Chinese language teacher with expertise in both languages. A third person, a psychologist fluent in English, compared the original and back-translated version to inspect their equivalence. Non-equivalent translations were then discussed to arrive at consensual agreement on the final wording.

3.1.2.1 Basic Psychological Needs Satisfaction To assess basic psychological need satisfaction, we used the same scale as in Study 1 (BPNS-R). Cronbach's alpha of relatedness was. 69. To ameliorate the reliability of the scales for competence and autonomy, it was necessary to remove respectively one and two items from these scales. After doing so, Cronbach's alphas were .67 and .61 for competence and autonomy, respectively.

3.1.2.2 Financial Safety Three items tapping into financial safety were written specifically for the purpose of the present study. These items read: "I feel that my financial situation is not good enough to support my family" (*reverse coded*); "I feel a strong sense of financial pressure" (*reverse coded*); and "I feel satisfied with my financial situation". Cronbachs' alpha was .60.

3.1.2.3 Materialistic Attainment To assess materialistic attainment, we adapted three items developed by Sheldon et al. (2001) to reflect attainment of materialistic aspirations. An example item is "I have nice and expensive things and possessions." Cronbach's alpha was .67.

3.1.2.4 Need Desire We used the same scale as in Study 1 to assess individuals' desire for basic psychological need satisfaction. Cronbach's alpha was .77.

3.1.2.5 Psychological Well-Being We intended to assess psychological well-being with the same four indicators as in Study 1. However, the reliability of self-acceptance was only

.45, which is statistically unacceptable (Kline 1999). Accordingly, we decided not to use this scale in Study 2. Cronbach's alphas for life satisfaction, depressive symptoms and vitality were .72, .76, and .78, respectively. An Exploratory Factor Analysis with principal-axis method on these three indicators suggested that one factor needed to be retained. As in Study 1, we *z*-scored and combined the three scales to form a composite well-being score.

3.2 Results

3.2.1 Preliminary Analyses

We first explored the effects of all background variables on all study variables. A MANCOVA showed that only family income had a significant multivariate effect on the study variables [$F(7, 286) = 2.07$, $p < .05$, $\eta^2 = .05$]. Hence, we only controlled for family income in the main analyses. Table 3 shows the means and standard deviations of the study variables and their correlations. Family income was positively correlated with both financial safety satisfaction and well-being. Financial safety satisfaction was related positively to well-being and negatively to desire for psychological need satisfaction. Materialistic attainment was unrelated to financial safety satisfaction and was related negatively to satisfaction of the three psychological needs and well-being. Consistent with Study 1, the psychological need satisfaction scales were highly interrelated and satisfaction of each of the psychological needs was related positively to well-being.

3.2.2 Main Analyses

Similar to Study 1, we first performed a stepwise hierarchical regression analysis to examine the first two hypotheses. We entered the relevant background variable (family income) in Step 1 and financial safety in Step 2. In Step 3, we added the three psychological needs to examine whether they would relate to well-being up and above the contribution of financial safety (Hypothesis 1). In Step 4, we added the three two-way interactions between psychological need satisfaction and financial safety to investigate whether the relations between the satisfaction of the psychological needs and well-being would depend on the perceived satisfaction of financial safety (Hypothesis 2). Results can be found in Table 4. In Step 2, financial safety satisfaction had a significantly positive relation with well-being and explained 7 % of the variance in well-being. Adding the

Table 3 Correlations among study variables in the chinese migrant worker sample (Study 2)

Measure	Mean	*SD*	1	2	3	4	5	6	7
1. Family income	3.54	1.56	–						
2. Financial safety	3.04	0.86	.12*	–					
3. Materialistic attainment	2.22	0.87	.10	.07	–				
4. Relatedness Satisfaction	3.49	0.50	.10	.01	−.24***	–			
5. Competence satisfaction	3.61	0.60	.07	−.02	−.27***	.49***	–		
6. Autonomy satisfaction	3.57	0.63	.10	−.01	−.26***	.48***	.58**	–	
7. Psychological need desire	3.38	0.70	.04	−.17**	−.22***	.22***	.28***	.31**	–
8. Composite well-being	3.48	0.44	.11*	.27***	−.13*	.46***	.48***	.45**	.18**

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4 Hierarchical regression analysis predicting well-being by background variables, financial safety, psychological need satisfaction and interactions (Study 2)

	Step 1	Step 2	Step 3	Step 4
Family income	.11*	.08	.01	.00
Financial safety (FS)		.27***	.29***	.26***
Psychological need satisfaction				
Relatedness satisfaction			.23***	.23***
Competence satisfaction			.27***	.28***
Autonomy satisfaction			.18**	.18**
Interactions				
Relatedness: satisfaction × FS				−.03
Competence: satisfaction × FS				.02
Autonomy: satisfaction × FS				.05
ΔR^2	.01*	.07***	.31***	.00

* $p < .05$; ** $p < .01$; *** $p < .001$. $N = 336$

Table 5 Hierarchical regression analysis predicting psychological well-being by family income, financial safety, materialistic attainment and their interaction (Study 2)

	Step 1	Step 2
Family income	.08	.09
Financial safety (FS)	.27***	.28**
Materialistic attainment (MA)	−.15**	−.17**
Interaction		
FS × MA		.05
ΔR^2	.10***	.00

* $p < .05$; ** $p < .01$; *** $p < .001$. $N = 330$

psychological needs in Step 3 resulted in a 31 % increase in explained variance, with all three needs being uniquely positively related to well-being. The relationship of financial safety with well-being remained unchanged. None of the three interaction terms was significant in Step 4, suggesting that the associations between psychological need satisfaction and well-being were not moderated by financial safety satisfaction.

To investigate the relation between financial safety satisfaction and desire for psychological need satisfaction (Hypothesis 3), we conducted a hierarchical regression with financial safety as a predictor, controlling for family income, and desire for psychological need satisfaction as dependent variable. Results showed that financial safety satisfaction related negatively to desire for psychological need satisfaction ($\beta = -.16$, $p < .01$).

3.2.3 Supplementary Analyses

A novel aspect of Study 2 involved examining the relative contribution of financial safety satisfaction and materialistic attainment in the prediction of well-being. A hierarchical regression analysis pointed out that financial safety satisfaction and materialistic attainment were both uniquely related to well-being, yet in opposite directions. Specifically, as

shown in Table 5, financial safety satisfaction yielded a positive relation to well-being, whereas materialistic attainment yielded a negative relation. The interaction between financial safety satisfaction and materialistic attainment was not significant.

Finally, we examined whether the negative association between materialistic attainment and well-being would be mediated by low psychological need satisfaction, as maintained within SDT (Ryan et al. 1996). After controlling for relevant background variables, materialistic attainment was negatively related to a composite score of need satisfaction ($\beta = -.27$, $p < .01$). Further, the association between materialistic attainment and well-being dropped to non-significance when entering satisfaction of the three psychological needs in the regression ($\beta = .03$, $p = .21$). Moreover, the indirect effect of materialistic attainment on well-being through need satisfaction was significant, as indicated by a Sobel test (1982), $z = -3.05$, $p < .01$. This indicates that the negative relation between materialistic attainment and well-being was fully mediated by diminished satisfaction of the three psychological needs.

3.3 Brief Discussion

Study 2 extended the findings of Study 1 to an adult sample living in poverty in China. Regarding the main effects of psychological need satisfaction, results were consistent with Hypothesis 1 and with the findings of Study 1. Satisfaction of all three psychological needs related to well-being beyond the benefits of financial safety satisfaction. Moreover, the relations between the satisfaction of the three psychological needs and well-being did not depend on the level of financial safety satisfaction (Hypothesis 2). Note that these findings were obtained in spite of the fact that the reliability of the measures was somewhat lower in this study compared to Study 1. The relatively lower reliability is likely due to the nature of our sample, which may have included at least some people who had difficulty understanding particular items. Still, given the brevity of the scales used, reliability estimates were acceptable. Furthermore, given the theoretically predictable pattern of associations obtained, the relatively lower reliability did not seem to undermine the validity of the scales. As for Hypothesis 3, the findings contradicted Maslow's hypothesis, as we found that individuals with lower financial safety satisfaction reported more (rather than less) desire for basic psychological need satisfaction. Finally, in a set of supplementary analyses, materialistic attainment was found to yield a negative relation to well-being, indicating that financial safety and materialistic attainment are functionally distinct. Finally, the negative relation between materialistic attainment and well-being was fully mediated by diminished psychological need satisfaction.

4 General Discussion

Based on BPNT and Maslow's hierarchical model, two prevalent theories in the literature on basic human needs, we conducted two studies to investigate the interplay between physical safety satisfaction and psychological need satisfaction in the prediction of well-being. Our primary aim was to examine whether the functional role of psychological need satisfaction would be constrained if safety needs were deprived. The two studies focused on distinct aspects of physical safety in two samples relatively at risk in terms of one of these two safety facets.

Dozens of studies have demonstrated the critical importance of satisfaction of the basic psychological needs for relatedness, competence, and autonomy for individuals' well-

being and adjustment (see Vansteenkiste and Ryan 2013, for a recent overview). Yet, only a few previous studies (Sheldon et al. 2001; Tay and Diener 2011) explored whether other needs matter on top of these needs. This is a critical issue because the claim that the psychological needs are *essential* requires that one is able to show that the effects of these needs are not constrained by other needs. The present set of studies aimed to fill this void in the literature by zooming in on the need for safety, as conceived within Maslow's hierarchical need model. Interestingly, the number of pages that have been devoted to Maslow's need model in textbooks or popularized books in motivation psychology (e.g., Hollyforde and Whiddett 2002) stands in sharp contrast with the number of empirical studies that have addressed this model. Therefore, we believe the current study sheds new light on this understudied topic and reveals a number of interesting findings.

4.1 Satisfaction of Basic Psychological Needs and Well-Being

The findings of both studies, although conducted in fairly heterogeneous samples coming from different cultural backgrounds, were remarkably consistent. That is, psychological need satisfaction was found to be functionally important above and beyond the effect of environmental or financial safety, which also yielded a unique relation to well-being. Although Tay and Diener (2011) reported similar findings, two differences stand out. First, the effect size of the unique association of safety in their findings was smaller than the effect sizes observed in the current set of studies. Presumably, as maintained by Maslow (1954), the deficiency need of safety may become more functionally salient in situations of deprivation, as is the case in the current samples, which comprise a substantial number of individuals at risk for safety threat.[1] Second, given this stronger contribution of safety satisfaction, the incremental and unique impact of psychological need satisfaction is all the more striking. Indeed, physical safety satisfaction did not cancel out the unique effects of each of the three psychological needs in the prediction of well-being. Therefore, compared to the Tay and Diener (2011) contribution, the current study involved a more conservative test of the SDT position.

Further, the functional role of psychological need satisfaction was not dependent on individuals' level of experienced safety need satisfaction. Said differently, even for those who perceived more deprivation in their environmental or financial safety, the satisfaction of their psychological needs contributed to their well-being to the same degree as for those who felt less deprived in safety. Thus, even individuals who felt threatened and unsafe, still reported higher well-being if they developed authentic and trustful relationships, felt confident in carrying out their activities and experienced a sense of psychological freedom in their behavior.

It is noteworthy that these converging findings were obtained in two samples with very different cultural traditions, socio-economic statuses, and age groups. In addition, both

[1] In Study 1, 5.4 % of the respondents reported very low levels of environmental safety satisfaction, 13.9 % experienced relatively low levels of environmental safety, 41.3 % felt somewhat unsafe/somewhat safe, 30.5 % reported relatively high environmental safety, and 8.9 % experienced very high levels of environmental safety satisfaction. In Study 2, a similar pattern was obtained, with 8.2 % of reporting very low levels of financial safety satisfaction, 29.6 % experiencing relatively low levels of financial safety, 43.1 % feeling somewhat unsafe/somewhat safe, 16.3 % reporting relatively high financial safety, and only 2.8 % experiencing very high levels of financial safety satisfaction. In both samples, a substantial percentage of individuals (i.e., 19.3 % in Study 1 and 37.8 % in Study 2) scored below the midpoint of the scale measuring safety satisfaction, enabling us to conservatively test for possible interaction effects between safety and psychological need satisfaction in the prediction of well-being. More importantly, there was substantial variation in both safety measures, which is critical to find unique contributions to well-being.

samples were understudied in previous research on needs. The findings of these studies provide important further evidence for the claim that relatedness, competence, and autonomy represent basic psychological nutriments that are universally important for human well-being, even above and beyond physical safety. The findings regarding the need for autonomy are particularly noteworthy because the universal importance of this need has been debated in cross-cultural literature. Specifically, autonomy is sometimes said to be beneficial only for individuals from higher social classes who are well educated or for individuals from relatively individualistic societies where the value of autonomy is emphasized (Markus and Schwartz 2010). This discussion is partly rooted in diverse conceptualizations of the notion of autonomy. In SDT, autonomy is conceived as the experience of volition and psychological freedom and is differentiated from the notion of independence and individualism (e.g., Chirkov et al. 2003; Ryan and Deci 2006). This differentiation is critical because some cross-cultural researchers understood SDT's notion of autonomy as independence and, on these grounds, argued that BPNT's universality claim should be refuted (e.g., Iyengar and Lepper 1999; Markus and Schwartz 2010). Yet, both people's independent actions as well as their reliance on others (i.e., dependence) can be either volitional or relatively more pressured in nature. Consistent with this analysis, recent research among Belgian (Van Petegem et al. 2012) and Chinese adolescents (Chen et al. 2013) showed that both forms of autonomy are distinct and that autonomy as volition rather than as independence positively contributed to well-being across cultures.

4.2 Desire for Psychological Need Satisfaction and Safety Need Satisfaction

One of the most explicit claims by Maslow about the hierarchical prepotency of needs involves the concept of need desire. According to Maslow (1943), "once a desire is satisfied, another pops up to take its place" (p. 81). In other words, only when the need for safety is satisfied, the energy necessary for pursuing satisfaction of higher level needs becomes available. Accordingly, a desire for psychological need satisfaction would get activated particularly strongly after the more potent safety need is satisfied. Although this assumption can be inferred directly from Maslow's hierarchical model, few studies, if any, have tested this hypothesis. None of the two current studies provided evidence for this hypothesis. On the contrary, we found that when individuals perceived more safety deprivation, they desired more (rather than less) satisfaction of the basic psychological needs. Specifically, when people live in a society with high crime rates and feel unsafe about their environment, or when people are in poverty and feel unsafe about their financial situation, they expressed a slightly stronger desire for relatedness, competence, and autonomy satisfaction.

Although Maslow tended to use the terms need desire and need pursuit interchangeably, it is important to differentiate between the desire for need satisfaction and the active pursuit of need satisfaction, with the latter term involving a more active behavioral intention to gain need satisfaction. The assessment of need desire in our study did not involve an active attempt to get the needs met, but rather involved a responsiveness to opportunities for psychological need satisfaction if such opportunities would be easily available (i.e., "If you have chance to get more satisfaction, how much would you like to have…"). Considered from this angle, our data suggest that people deprived in safety need satisfaction would desire need satisfaction if such need satisfaction is easily available. If desire would have been operationalized as the active attempt to pursue need satisfaction or the choice between devoting limited energy to the gratification of safety or psychological

needs, safety deprivation would perhaps be associated negatively with psychological need desire.

Another interpretation for the lack of relation between safety satisfaction and desire for psychological need satisfaction could be that there was not enough variance in safety satisfaction in the current samples. Yet, both samples comprised a substantial number of individuals who scored below the middle point of the safety satisfaction scale and the scores were approximately normally distributed. The standard deviations of both safety measures were larger than .85, suggesting substantial variability. Nonetheless, it is possible that samples with even more variance in safety satisfaction might result in different relations between safety satisfaction and psychological need desire. Specifically, there might exist a threshold for safety satisfaction, such that individuals who perceive safety satisfaction beyond this threshold might begin to desire more psychological need satisfaction. Such a curvilinear association was not found in the present study.[2] Clearly, more research is needed in this area, ideally relying on heterogeneous samples characterized by large variability in safety satisfaction.

4.3 Materialistic Attainment and Well-Being

Consistent with previous research, we found that when individuals reported higher materialistic attainment (i.e., when they managed to gather more luxurious and expensive material goods), they experienced less well-being. Although at first sight higher materialistic attainment might reflect a better financial situation, it had a totally opposite relation with well-being than financial safety satisfaction. Interestingly, the data showed that there is no correlation between financial safety and materialistic attainment, suggesting that financial safety and materialistic attainment are almost fully independent constructs. In other words, at least some individuals who experience financial safety may not be able or willing to consume luxurious goods and at least some individuals who achieve their materialistic ideals may be unable to foresee in their basic living conditions. Future research with person-centered analyses (e.g., cluster analysis) may focus more directly on varying combinations of financial safety and materialistic attainment and their associations with well-being.

The finding that materialistic attainment related negatively to well-being is somewhat striking considering that the attainment of materialistic goals might represent a mechanism to cope with poverty. Research indeed shows that, in the face of economic threat, individuals become more oriented towards extrinsic goals and pursue more materialistic aspirations (Kasser 2002; Sheldon and Kasser 2004). It could be reasoned that poor individuals could compensate for the feeling of belonging to a low-status group by engaging in conspicuous consumption so as to impress others (Lapoint and Hambrick-Dixon 2004). From an evolutionary perspective, it also seems likely that wealth and status

[2] Based on the comment of an anonymous reviewer, we examined whether safety need satisfaction yielded a curvilinear association with psychological need desire, as individuals may need to surpass a critical threshold in safety satisfaction before desiring getting their psychological needs met. In Study 1 (i.e., the South African sample), no evidence for such a curvilinear association was found. Yet, in Study 2, (i.e., the Chinese sample), the quadratic effect was significant. However, the curvilinear relation between financial safety satisfaction and psychological need desire indicates that financial safety deprivation related to a greater desire for psychological need satisfaction among individuals who experience low financial safety, while this relation becomes non-significant among individuals who experience higher financial safety. This suggests that there is a threshold for financial safety to no longer relate to psychological need desire, which deviates from what one could expect based on Maslow's need model (i.e., that a greater desire for psychological need satisfaction would only emerge among those high in safety satisfaction).

may have offered important short-term benefits in countering threats to security and survival in our past (Buss 2000). Although the pursuit and even attainment of materialistic goals may be coping responses to poverty, unfortunately, the present findings suggest that they do not represent adaptive coping strategies for those who feel threatened in their financial security. In fact, materialistic attainment and financial security did not interact in the prediction of well-being, suggesting that materialistic attainment was detrimental for everyone.

Further, we found that the negative relations between materialistic attainment and well-being were fully mediated by diminished psychological need satisfaction. This is consistent with previous theoretical arguments and empirical findings that materialistic values deprive satisfaction of the needs for relatedness, competence, and autonomy (Sheldon and Kasser 2004; Vansteenkiste et al. 2008). Our findings suggest that, even when people attain their materialistic goals, they still pay a price in terms of frustrated psychological needs and subsequent lowered well-being. In conclusion, money seems like a double-edged sword, affecting people's well-being differently depending on its functional meaning. While money is beneficial when it is perceived as a means to provide in basic resources, it is detrimental when it is perceived as a means to demonstrate one's worth through luxury.

4.4 Limitations and Directions for Future Research

One shortcoming of the present studies is their cross-sectional design. As such, we could not draw conclusions about the causal direction of effects. For instance, well-being may not only be a consequence of need satisfaction but may also increase the likelihood of new need-satisfying experiences. Future longitudinal or experimental designs are needed to address the direction of effects or even causality in these associations.

A second limitation is that we relied on participants' self-reports as a single source of information about all study variables. This exclusive reliance on self-reports may have artificially inflated some of the observed relations and also raises problems with response tendencies that we could not control for (Arnold and Feldman 1981). For example, in Study 1, assessing objective income might have been a more precise measure as opposed to the weighted self-reported family income measure. Yet, with regard to the study variables, we deliberately used self-reports to tap into individuals' intrapsychic experiences of satisfaction and desire for certain needs. Nevertheless, it would be desirable to control for social desirability in future investigations.

A third limitation could be the overestimated literal ability of our participants. Although English is the most commonly spoken language in official and commercial South African public life (Da Silva 2008), the percentage of native English-speaking people in South Africa is only 8.2 % (Van der Merwe and Van der Merwe 2006). Future research should translate and validate the English version of this questionnaire battery in other official languages and try to replicate our findings (Kim et al. 2000). In China, although every participant understood Chinese Mandarin, the low educational level of the sample may have limited participants' understanding of certain items that require relatively higher levels of introspection, such as self-acceptance.

Fourth, although our measures of the different safety facets were adapted from previously validated scales, the items might have been be too general. Future research might include more specific items concerning real-life threats to safety in the specific region of interest. In South Africa, for example, an item such as "I feel safe when walking the streets at night" would reflect a more precise measurement of local environmental safety. Then, it would be interesting to investigate environmental and financial safety together in a sample

that is at risk in terms of both aspects of safety. For instance, would the satisfaction of environmental safety help to buffer the negative effect of the deprivation of financial safety, and vice versa, would the satisfaction of financial safety help to relieve the negative effect of environmental safety deprivation?[3] In posing these questions, other facets of physical safety could equally receive attention, such as the need to be physically healthy.

Finally, we sampled individuals from societies where individuals might be relatively at risk in either the need for environmental safety (i.e., in South Africa) or financial safety (i.e., China). Yet, we need to be cautious in generalizing the current findings to the general population. For instance, the contribution of safety satisfaction to well-being may be due to the fact that the safety need is more salient in at-risk samples or may be due to the substantial variation that we observed in the safety scores. Future studies may try to replicate these findings with other samples in order to draw a more complete picture of the interplay between safety and psychological need satisfaction. One important direction in this regard is to sample individuals who experience even lower levels of safety need satisfaction than was the case in our samples. Our hypotheses could then be tested in an even more conservative fashion.

5 Conclusion

In two different studies we found that satisfaction of the three basic psychological needs specified by SDT, namely relatedness, competence, and autonomy, yielded a unique contribution to psychological well-being above and beyond environmental and financial safety, even for those who experience safety deprivation. Furthermore, individuals who perceived lower safety satisfaction expressed a greater desire for psychological need satisfaction. These results seem to echo with Victor Frankl's (1946) description of people's search for meaning and psychological freedom in extremely unsafe and deprived situations, such as the concentration camp he survived during World War II: "Everything can be taken from a man but one thing: the last of the human freedoms—to choose one's attitudes in any given set of circumstances" (Frankl 1946, p. 75). Consistent with the notion that humans are not fully conditioned by physical circumstances, the present findings suggest that deprivation of physical safety does not block the benefits people extract from basic psychological need satisfaction.

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[3] In Study 1, besides environmental safety, we included a single-item assessment of financial satisfaction ("I feel satisfied with my financial situation"). When controlling for this financial satisfaction score in the regression, the effect of environmental safety remained significant ($\beta = .50$, $p < .01$), suggesting that financial satisfaction did not cancel out the effect of environmental safety satisfaction. Future studies could explore more systematically the unique contribution and the interplay between satisfaction of different aspects of safety.

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