



Optimal Functioning in Society: A Conceptualization, a Measure, and a Look at Determinants

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Accepted: 30 December 2022 / Published online: 28 January 2023
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Abstract

This research presents the conceptualization and validation of a new scale assessing a multidimensional perspective on well-being named “Optimal Functioning in Society” (OFIS; Vallerand, 2013). The concept of OFIS refers to high levels of psychological, physical, and relational well-being, high performance in one’s main field of endeavor, and contribution to society. Three studies conducted with workers (*Study 1 & 3*) and students (*Study 2*) supported the psychometric properties (i.e., factor structure, reliability, convergent validity, temporal consistency) of the OFIS scale. Further, two assessments of its nomological validity were conducted. In line with the Self-Determination Theory (Ryan & Deci, 2017), *Study 2* showed that altogether the three basic psychological needs were positively related to optimal functioning. Further, based on the Dualistic Model of Passion (Vallerand, 2015), *Study 3* investigated longitudinal associations between passion and optimal functioning, and showed a nuanced role of harmonious and obsessive passion in the promotion of optimal functioning. Finally, the OFIS scale was found to be invariant across occupations, age, gender, and relationship status. Altogether, results from these studies support the psychometric properties of the OFIS scale.

Keywords Optimal functioning in society · Well-being · Passion · Basic psychological needs

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1 Introduction

Over the past 20 years or so, much interest has been devoted to positive psychology. One of the main goals of this field of research is to identify the factors that contribute to well-being. In order to do so, one needs to provide a definition of well-being. To this end, an important issue deals with how best to construe well-being. Is it simply happiness or a sense of direction and purpose in life? Is it physical well-being? Is it being productive? Is it being positively connected to others or having a positive impact on society? Over the years, multiple concepts and measures have been proposed, encompassing a number of dimensions, including some of the above.

In this paper, we present a novel multidimensional perspective on well-being presented by Vallerand (2013) termed “Optimal Functioning in Society” (OFIS). This perspective on human flourishing posits that OFIS entails psychological, physical, and relational well-being, high performance in one’s main field of endeavor, and contributing to society. Based on this definition, we report the results of three studies on the development and validation of a scale to measure this construct, namely the OFIS scale.

We also offer two tests of the OFIS scale nomological validity by positioning this conceptualization in relation with the Self-Determination Theory (SDT; Ryan & Deci, 2017) and the Dualistic Model of Passion (DMP; Vallerand, 2015). The SDT posits that the satisfaction of basic psychological needs acts as a fundamental nutrient for human optimal functioning (Chen et al., 2015; Deci & Ryan, 2000). This position has been widely supported by research (for a review, see Ryan & Deci, 2017). Thus, *Study 2* assessed the relationship between the satisfaction of the three basic psychological needs and the OFIS. Further, research in positive psychology has long supported the role of intentional activities as an important predictor of well-being (Lyubomirsky et al., 2005; Sheldon & Lyubomirsky, 2021). According to the DMP, a passion is a specific type of intentional activity that can take a harmonious or an obsessive form. Hundreds of original studies supported that harmonious passion promotes well-being, while obsessive passion may undermine it (for a review, see Vallerand, 2015). Thus, we assessed in *Study 3* if engaging in a harmonious or an obsessive passion will respectively foster and hinder each dimension of the OFIS. We conclude by an assessment of the OFIS scale discriminant validity across multiple populations.

2 An Overview of Optimal Functioning Conceptualizations

Through the ages, a number of well-being conceptualizations have been proposed. In more specific terms, scholars have tried for millennia to understand the characteristics of an optimally functioning person. Presently, the World Health Organization (WHO) posits that a healthy functioning individual must be mentally, physically, and socially well (WHO, 1948). The WHO also adds that positive mental health is defined as the capacity for people to realize their abilities, to effectively cope with normal life stresses, to work productively, and to contribute to their community (WHO, 2001).

Historically in the field of psychology, well-being has not been conceptualized with such a broad scope. More often than not, scholars in our field defined human well-being through the lens of two perspectives called hedonia and eudemonia. On one hand, the hedonic perspective of well-being focuses on happiness, pleasure, and pain avoidance (Deci & Ryan,

2008; Ryan & Deci, 2001). For example, Kahneman et al. (1999) argued that well-being could be adequately captured by the presence of positive emotions. Similarly, Diener et al. (1999) proposed the concept of subjective well-being which views the quality of a person's life as the relative presence and absence of positive and negative emotions, and a general perception of satisfaction with life.

On the other hand, the eudemonic perspective focuses on self-actualization and on the state of optimal functioning that derive from the fulfillment of one's potential (Ryan & Deci, 2001; Ryan et al., 2008; Waterman, 2008). This perspective was popularized by humanist psychologists like Rogers or Maslow. For Rogers (1961), people have a natural movement toward self-direction, trust in themselves, openness to their experience, and acceptance of others. Fully functioning people show coherence between their identity and their experiences. Similarly, Maslow (1954, 1971) posited that self-actualized people fully use their talents, capacities, and potentialities. More specifically, Maslow suggested that fully functioning people have to some extent satisfied six basic human needs ordered in the following hierarchical manner: physiological, security, love and belongingness, self-esteem and self-respect, self-actualization, and self-transcendence.

Together, they paved the way to other conceptualizations of well-being centered around self-actualization achieved through the pursuit of meaningful activities and life goals. For example, Waterman and colleagues (Waterman, 1990, 2008; Waterman et al., 2010) defined eudemonic well-being as a feeling of personal expressiveness felt when people use and develop their potential in activities that give purpose to their lives. Ryff (1989) defined what it means to be psychologically well while being "explicitly concerned with the development and self-realization of the individual" (Ryff & Singer, 2008, p. 14). She suggested that psychological well-being encompasses self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth.

Currently, scholars in the field of positive psychology have tried to broaden their scope and present eudemonic conceptualizations of well-being that consider multiple areas of life where a self-actualized person should be optimally functioning (Vittersø, 2013). This view on well-being, often referred to as flourishing, is defined by Butler and Kern (2016) as "a dynamic optimal state of psychosocial functioning that arises from functioning well across multiple psychosocial domains" (p. 2). In these models, some form of hedonia is often integrated as a subdomain of functioning. Further, these models have been operationalized by many leading authorities on the matter in two fashions.

On the one hand, some scholars considered well-being as a condition reflecting positive mental health that can be diagnosed in the presence of positive symptoms. An approach analogous to the diagnosis of mental health issues. For example, Keyes (2005) posited that in order to be "diagnosed" as optimally functioning, a flourishing individual must present multiple symptoms of emotional well-being (i.e., positive emotions, life satisfaction, and happiness), coupled with symptoms of positive functioning, which are characterized by indicators of social well-being (i.e., social contribution, social integration, social actualization, social acceptance, and social coherence) and indicators of psychological well-being (i.e., self-acceptance, environmental mastery, positive relations with others, personal growth, autonomy, and purpose in life). Similarly, Huppert and So (2013) conceptualized a flourishing individual as a person who experiences positive emotions coupled with a strong endorsement of what they referred to as positive characteristics (i.e., emotional stability, vitality, optimism, resilience, and self-esteem) and positive functioning indicators (i.e., engagement, competence, meaning, and positive relationships).

On the other hand, others have proposed more general multidimensional conceptualizations of flourishing, where individuals are "optimally functioning" if they present high

levels of functioning in multiple relatively independent psychosocial domains. For example, Seligman (2011) views flourishing as experiencing high levels of positive emotions, engagement in life, a state akin to Csikszentmihalyi's (1990) concept of flow, positive relationships, meaning and purpose in life, and accomplishment. VanderWeele (2017) defines flourishing as encompassing happiness and life satisfaction, physical and mental health, meaning and purpose in life, character and virtue, and close social relationships. Finally, Diener et al. (2010) considered flourishing more simply as encompassing psychological and social well-being, measured by eight indicators of human functioning (i.e., having purpose and meaning in life, having supportive and rewarding relationships, being engaged and interested in daily activities, contributing to the happiness and well-being of others, being respected by others, perceiving yourself as a good person, being optimistic toward the future, and feeling competent in important activities).

Although there are overlaps among these different operationalizations, we agree with the conclusion of Hone et al. (2014) and Forgeard et al. (2011) that there seems to be no consensus on what makes a human being optimally functioning and what dimensions or domains of functioning should be covered. Should all of the above well-being dimensions be included in an optimal functioning perspective or are some of these more important than others? Should we focus solely on psychosocial elements to understand human well-being, or should other important areas of functioning be considered, such as physical health as proposed by the WHO (1948)? Indeed, except for VanderWeele's model (2017), flourishing conceptualizations focus on psychosocial well-being and omit physical functioning. Finally, some conceptualizations include dimensions that are usually considered antecedents of functioning, such as basic psychological needs or personality traits (e.g., optimism). Should we include antecedents in the definition of optimal functioning or should we focus on end-state well-being variables? To address these questions, we present in the next section a definition and operationalization of well-being reflecting the concept of OFIS.

3 Optimal Functioning in Society: A Definition and Conceptualization

According to the OFIS model of well-being (Vallerand, 2013), *optimally functioning people experience high levels of psychological, physical, and relational well-being, high levels of performance in one's main area of endeavor (i.e., current occupation), and contribution to one's community or society as a whole*. The word optimal in this definition conveys the idea that the whole system is functioning at a high level (Constantine & Sue, 2006; Ford & Smith, 2007). In line with Diener et al. (2010) and Seligman (2011), this position implies that while at times one area may be low and others high, typically, a person should be highly functioning in all main domains of well-being to display "optimal" functioning. Thus, maximizing one area of functioning (e.g., performance in one's main field of endeavor) while neglecting others (e.g., physical health) should not lead to an optimal state of well-being.

Further, anchored in the flourishing perspective, the OFIS definition of well-being is coherent with the shared view that human well-being should cover multiple areas of functioning in various areas of life (Diener et al., 2004; Ford & Smith, 2007; Sheldon, 2004). More precisely, the OFIS model is in line with the WHO's definitions of health (i.e., psychological, physical, and social well-being) and positive mental health (i.e., productivity and functioning in society). We propose to operationalize each domain of functioning considered by the OFIS model.

First, the OFIS considers psychological well-being (Vallerand, 2013), which is operationalized as both high levels of happiness, and meaning and purpose in life. This view is supported by Vittersø et al. (2010) who argued and provided evidence that these two specific characteristics of hedonia and eudemonia are needed to capture the full experience of psychological well-being. Specifically, they posited that the hedonic state of happiness is indicative of a state of equilibrium, meaning people have achieved goals or satisfied needs. In parallel, psychological aspects of eudemonia are indicative of development and growth in challenging situations which allow for life events to be perceived as meaningful. In addition, this operationalization is generally included in models of flourishing, which consistently considered psychological well-being measured as the presence of positive emotions or happiness, the absence of negative emotions (e.g., Diener et al., 2010; Huppert & So, 2013; Keyes, 2005; Seligman, 2011; VanderWeele, 2017), and/or as a sense of meaning, purpose, or direction in life (e.g., Diener et al., 2010; Huppert & So, 2013; Keyes, 2005; Ryff, 1989; Seligman, 2011; VanderWeele, 2017).

Second, the OFIS advances that a good general physical well-being is a core element of optimal functioning (Vallerand, 2013). This perspective agrees with theoreticians like Maslow (1971) who see this area of well-being as a foundation to achieve higher functioning. In addition, although few conceptualizations of flourishing consider physical health (for a rare exception, see VanderWeele, 2017), it is generally understood that there is a reciprocal interplay between physical health and other areas of functioning such as psychological well-being (Friedman & Kern, 2014; Ryff & Singer, 2008), performance (Sonnentag, 2015) or relations (Holt-Lunstad, 2018; Umberson et al., 2010). Thus, a growing number of voices now suggest physical well-being should be considered as a dimension of flourishing (Butler & Kern, 2016; Friedman & Kern, 2014; Seligman, 2018).

Third, the OFIS states that an optimally functioning person should have high quality relationships (Vallerand, 2013). This perspective is supported by Baumeister and Leary (1995) who proposed that humans have a “pervasive drive to form and maintain at least a minimum quantity of lasting, positive and significant interpersonal relationships” (p. 497). In addition, conceptualizations of flourishing argue that an individual should not only feel connected to others, but also benefit and grow from satisfying, rewarding, warm, trusting, loving, or supporting social relationships (Diener et al., 2010; Huppert & So, 2013; Keyes, 2005; Ryff, 1989; Seligman, 2011; VanderWeele, 2017). However, simply considering relationships in general might constitute an oversimplification of their contribution to functioning. Baumeister and Leary (1995) posited as a core principle of their theory that social bonds are almost all interchangeable in the promotion of social well-being. Yet, they specified that close romantic relationships have benefits (e.g., sexuality or a stronger bond) that cannot be obtained through other types of non-romantic relationships (e.g., family or friends). Research mostly supported this claim. Indeed, when compared to single individuals, people in a committed romantic relationship seem to experience greater psychological (Dush & Amato, 2005) and physical well-being (Holt-Lundstad et al., 2008). Further, as shown by Holt-Lunstad et al. (2008), the benefit of a high-quality romantic relationship on health cannot be compensated by a supportive social network. Thus, both romantic (Diener et al., 2000; Gómez-López et al., 2019; Holt-Lundstad et al., 2008; Hudson et al., 2020; Luciano & Orth, 2017; McGrath et al., 2010; Vanassche et al., 2013) and non-romantic relationships (Fuller-Iglesias, 2015; Grevenstein et al., 2019; Hombrados-Mendieta et al., 2013; Reblin, et al., 2010) have the potential to contribute to people’s functioning, but romantic relationships offer a satisfaction that cannot be compensated by non-romantic ones. We posit that optimal functioning should encompass high-quality romantic and non-romantic relationships.

Fourth, Vallerand (2013) argues that people should perform at high levels in their main field of endeavor in life. More specifically one's occupation (e.g., work, education) represents the activity in which people dedicate most of their time and energy and should have the greatest impact on their perception of productivity. Along with contributing to society, occupational productivity has been specifically pointed out as a core element of positive mental health (WHO, 2001). Moreover, most conceptualizations consider some forms of actual performance (e.g., environmental mastery [Keyes, 2005] and accomplishment [Ryff, 1989; Seligman, 2011]) that goes beyond the belief that one can or will perform.

Fifth, Vallerand (2013) posits as a last area of functioning that thriving people contribute to their community or society at large. As Compton and Hoffman (2013) argued, well-being is not a purely individual phenomenon. On the contrary, thriving people are fully functioning in a broader social context. Contribution to society has frequently been recognized as an indicator of flourishing long before the WHO (2001) posited it as a staple of mental health. Indeed, almost a century ago, Adler (1933; cited in Watts, 2012; see also Watts & Ergüner-Tekinalp, 2017) proposed the concept of "gemeinschaftsgefühl" which translates to community feeling and social interest. For Adler, community feeling consists in the sense of belonging to a greater social ensemble or even the humankind, while social interest is the action of community feeling, thus contributing to the common good. Later on, Maslow (1971) added self-transcendence to his hierarchy of needs, which is a sense of integration with society or humankind by engaging in causes that go beyond the self (Koltko-Rivera, 2006). Erikson (1968) also proposed a similar concept in his theory of psychosocial development called "generativity." Generativity involves an innate desire to contribute to the welfare of future generations. Failure to leave a positive legacy would lead to a state of stagnation and self-absorption, which may become pathological. Erikson proposed this desire to contribute as the seventh stage of his theory of psychosocial development, which should be stronger in midlife. However, research showed that it is present and stable across adulthood (Einolf, 2014). Studies even showed it is not simply explained by environmental factors but also has a genetic source (Faßbender et al., 2019; Wang et al., 2022). More recently, Diener et al. (2010) and Keyes (2005) also considered social contributions such as contributing to the happiness of others or to the broader society as dimensions in their flourishing models.

In sum, the OFIS model posits that well-being is best represented by high levels of psychological and physical well-being, high-quality social relationships with a romantic partner(s) and with other individuals in one's social network, performance in one's occupation, and contributing to the community or society at large. This perspective also addresses some of the issues surrounding the conceptualization of well-being. As the reader probably noticed, the OFIS does not claim to introduce a drastically new view on well-being with dimensions of functioning that have never been considered in the literature on flourishing. On the contrary, it even includes some of the more recurrent areas of functioning present in flourishing models. However, it posits that we must envision flourishing more holistically, by considering elements that go beyond general psychosocial functioning (e.g., physical health or performance in the occupation). To do so, this perspective has been anchored in the WHO's definitions of health and positive mental health.

The OFIS perspective also focuses on elements that constitute areas of functioning while putting aside what can be considered *determinants* of such functioning. The present position thus entails that dispositional and motivational characteristics should not be considered dimensions of well-being as such. Indeed, some conceptualizations of flourishing suggested that trait-like variables such as emotional stability (e.g., Huppert & So, 2013) or factors that are central to an individual's motivation such as autonomy (e.g., Keyes, 2005)

or engagement (e.g., Diener et al., 2010; Seligman, 2011) should be considered as dimensions of well-being. However, it is generally accepted that personality traits interact with various aspects of a situation in the prediction of outcomes such as psychological well-being (e.g., Diener et al., 1999, 2003), physical health (e.g., Friedman & Kern, 2014), and performance (e.g., Judge & Zapata, 2015). For example, a person with low emotional stability may thrive in a safe and stable environment but struggle in a stressful one. Similarly, the SDT posits that the basic psychological needs of autonomy, competence, and relatedness act as fundamental nutrients of thriving and optimal functioning (Chen et al., 2015; Deci & Ryan, 2000; Ryan & Deci, 2017) and not as end-states of well-being. Decades of research has supported the role of these three basic needs as determinants of functioning, including some of the dimensions proposed in OFIS (e.g., Butkovic et al., 2020; Chen et al., 2015; Chiniara & Bentein, 2016; Ng et al., 2012; Patrick et al., 2007; Pavey et al., 2011; Sheldon et al., 2010; Vanhee et al., 2016). Imagine a person resigns from a job in a very controlling environment and is hired in an organization that promotes autonomy. This new environment would foster need fulfillment, which in turn would enhance this person's well-being (Gillet et al., 2012). Thus, although antecedents of well-being should be differentiated from well-being itself, they represent an important part of its nomological network. Indeed, they are key to identifying more at-risk populations and creating interventions to foster optimal functioning.

4 The Present Research

The purpose of the present research was to report on the development and validation of the OFIS scale. This scale features six dimensions encompassing psychological and physical well-being, high-quality social relationships with a romantic partner(s) and with others in one's social network, performance in one's current occupation, and contributing to one's community or society at large. Based on Mackenzie et al. (2011) recommended stages for scale development, three studies were conducted to validate the OFIS scale for an adult population. In *Study 1*, the OFIS scale items were generated, and the factorial validity and reliability of the scale were assessed using a sample of workers. Convergent validity was also tested with multiple indicators of human functioning (i.e., flourishing, vitality, emotions, indicators of physical health, and satisfaction with life) related to the six OFIS scale dimensions. In *Study 2*, we sought to replicate the factor structure of the OFIS scale with a sample of students. We also conducted a first test of the OFIS scale nomological validity. Specifically, we tested whether the satisfaction of the three basic psychological needs was related to each dimension of functioning. In *Study 3*, a longitudinal design was used to assess the OFIS structure as well as its temporal consistency with a sample of workers. We also offered a second test of nomological validity by assessing the relationship between passion for work, a known predictor of well-being, and the OFIS. Finally, the OFIS scale's generalizability was assessed using all participants recruited in this research. Using invariance tests, we assessed whether the OFIS scale was free of measurement bias and differences across occupations (i.e., work vs. studying), age groups, genders, and relationship status.

5 Study 1

The purpose of *Study 1* was to generate the items of the OFIS scale and then examine its psychometric properties in the following manner. First, the scale factorial validity was assessed using exploratory factor analysis (EFA). In addition, multiple indicators of reliability (i.e., Cronbach alpha and McDonald omega) were assessed. Second, the convergent validity of the OFIS scale was assessed, with various indicators of positive human functioning. More precisely, Butler and Kern's (2016) PERMA profiler scale measuring Seligman's (2011) dimensions of flourishing was used. PERMA assesses positive emotions, meaning in life, engagement, positivity of relationships and accomplishment. In addition, various affective and well-being scales such as Ryan and Frederick's (1997) measure of vitality, Fredrickson (2009) positive emotions subscale of the Differential Emotions Scale, and Diener et al. (1985) Satisfaction with Life scale were measured. Further, sleep quality has been identified as a major contributor of a good physical health (Buysse, 2014). Thus, an indicator of sleep quality from the World Health Organization Quality of Life questionnaire (WHOQL; 2012) was used as a physical health criterion. Finally, the convergent validity of the OFIS scale was also assessed with indicators of ill-being, which are the negative emotions subscale of Fredrickson's (2009) scale and two criteria of poor health pertaining to pain and medication taken from the WHOQL (2012). Overall, it was hypothesized that the EFA would support the factor structure of the OFIS (i.e., psychological well-being, physical well-being, quality of the romantic and non-romantic relationships, performance in the main field of endeavor, and contribution to the community or society). Further, appropriate levels of internal consistency were expected (higher than 0.70). Finally, positive correlations were expected between the OFIS subscales and positive measures of human functioning, whereas negative correlations were expected with negative emotions and poor health indicators.

6 Method

6.1 Item Generation

To create the items of the OFIS scale, we first reviewed existing measures to identify relevant items that corresponded to the operationalization of each OFIS dimension presented above. To measure psychological well-being, we identified items from Lyubomirsky and Lepper (1999) subjective happiness scale and Steger et al. (2006) meaning in life questionnaire to capture psychological characteristics of hedonia (i.e., happiness) and eudemonia (i.e., meaning and purpose in life). The retained items were adapted to fit with the present scale. With respect to physical well-being, items from Butler and Kern (2016) and Lee et al. (2015) that capture people's general perception of their physical health were adapted. Items of the Quality of Interpersonal Relations Scale (Senécal et al., 1992) that measure how one is satisfied and benefits from relationships were selected and adapted to measure relationship quality with a past or present romantic partner(s) and relationship quality with other people in one's social network. People who were not currently romantically involved had to measure their past relationships "in general." This strategy allows having an assessment for all participants and to capture quality of romantic relationships for a wide variety of status (e.g., married, living with a partner, dating, single, etc.). In support of this

approach, research has shown that people develop stable relational models of attachment that influence the quality of their relationships across partners (Chen & Busby, 2019). Further, Dush and Amato (2005) showed that people seem to evaluate their relationship quality as a function of their level of commitment. Along with this subscale, we asked if the participant was currently in a romantic relationship to assess whether there is a meaningful difference in terms of romantic relationship quality. Items measuring performance were inspired by popular scales focusing on both in-role (i.e., meeting performance requirements of a situation) and contextual performance (i.e., performing above and beyond what is expected; Becker & Kernan, 2003; Goodman & Svyantek, 1999; Van Dyne & LePine, 1998; Williams & Anderson, 1991). Finally, items were created to capture whether people generally perceived they had a positive contribution to their community or society.

A total of 33 items were created. Then, a panel of three scholars in psychology and experts in well-being selected the items that were most representative of each domain of functioning. A total of 10 items were discarded for various reasons including ease of understanding, redundancy, etc. This left a total of 23 items.

6.2 Participants and Procedures

A total of 495 participants from the United States completed an online survey posted on the Mechanical Turk website in exchange for a small monetary compensation. All participants provided informed consent. To participate in this study, respondent needed to be full-time workers. Consequently, 61 participants were removed from further analysis because they did not specify work as their main occupation (19 participants were unemployed, retired, or students), *and/or* they offered a response deemed unsatisfactory when asked to indicate what their work is (18 participants), *and/or* because they answered incorrectly to control items (50 participants). The final sample was thus composed of 434 participants, 58.1% identified as women (252 women, 181 men, 1 unspecified), with an average age of 37.38 years ($SD=11.35$ years). On average, participants worked 39.41 h ($SD=8.91$ h) per week and had 6.52 years ($SD=7.26$ years) of tenure in their occupation. Most of them (76.0%) were currently in a romantic relationship.

6.3 Measures

6.3.1 OFIS Scale

Participants completed the 23 items of the OFIS scale. The OFIS scale contains six subscales: psychological well-being (4 items; $\alpha=0.908$), physical well-being (3 items; $\alpha=0.964$), quality of the romantic relationships (4 items; $\alpha=0.975$) and the non-romantic relationships (4 items; $\alpha=0.970$), performance in the main field of endeavor (here work; 4 items; $\alpha=0.853$), and contribution to the community or society at large (4 items; $\alpha=0.942$). All 23 items, along with their means and standard deviations are presented in Table 1. Psychological well-being, physical well-being, and the quality of non-romantic relationships were assessed in general in the participant's life. Participants were also asked to evaluate the quality of their current romantic relationship or their past ones in general if they were not currently involved. Performance was evaluated with respect to the participant's work, which was the main occupation in life considered in this study. Contribution

Table 1 The 23-item OFIS scale

| Items | Study 1 | | Study 2 | | Study 3 (T1) | | Study 3 (T2) | |
|---|---------|-------|---------|-------|--------------|-------|--------------|-------|
| | M | SD | M | SD | M | SD | M | SD |
| Psychological well-being (PWB) | | | | | | | | |
| PWB1-I understand my life's meaning | 4.499 | 1.621 | 4.316 | 1.636 | 4.846 | 1.611 | 4.777 | 1.497 |
| PWB2-My life has a clear sense of purpose | 4.401 | 1.867 | 4.211 | 1.814 | 4.927 | 1.737 | 4.953 | 1.704 |
| PWB3-Compared with most of my peers, I consider myself happier | 4.494 | 1.813 | 4.308 | 1.836 | 4.946 | 1.764 | 5.011 | 1.704 |
| PWB4-I am generally happy | 4.263 | 1.872 | 4.130 | 1.868 | 4.400 | 1.958 | 4.245 | 1.818 |
| | 4.848 | 1.753 | 4.620 | 1.732 | 5.109 | 1.745 | 4.902 | 1.689 |
| Physical well-being (PHY) | | | | | | | | |
| PHY1-In general, how would you say your health is? | 6.818 | 2.096 | 6.692 | 2.145 | 7.188 | 1.815 | 7.010 | 1.939 |
| PHY2-Please indicate how you evaluate your physical health in general | 6.876 | 2.093 | 6.811 | 2.189 | 7.204 | 1.841 | 7.026 | 1.982 |
| PHY3-Compared to others of your same age and sex, how would you rate your health? | 6.866 | 2.117 | 6.672 | 2.237 | 7.193 | 1.867 | 7.022 | 2.027 |
| | 6.707 | 2.298 | 6.594 | 2.313 | 7.167 | 1.867 | 6.982 | 1.949 |
| Performance (PERF) | | | | | | | | |
| At work.../In my studies... | 5.487 | 1.154 | 5.035 | 1.145 | 5.810 | 1.070 | 5.858 | 1.029 |
| PERF1-I properly complete the tasks that I have to do | 5.894 | 1.214 | 5.284 | 1.245 | 6.076 | 1.028 | 6.172 | 0.912 |
| PERF2-I exceed my performance requirements | 5.317 | 1.465 | 4.853 | 1.497 | 5.629 | 1.329 | 5.591 | 1.362 |
| PERF3-I generally go beyond the call of duty to reach a very high level of performance | 4.993 | 1.546 | 4.719 | 1.442 | 5.404 | 1.490 | 5.500 | 1.491 |
| PERF4-I meet the official demands of performance of my work/student position | 5.744 | 1.291 | 5.268 | 1.285 | 6.131 | 1.066 | 6.168 | 1.010 |
| Quality of the present or past romantic relationships (RELNR) | | | | | | | | |
| In general, my current romantic relationship (or my past ones, in general, if I am not currently involved)... | 5.229 | 1.703 | 5.050 | 1.759 | 5.260 | 1.746 | 5.194 | 1.677 |
| RELNR1-...is enriching | 5.153 | 1.710 | 4.973 | 1.776 | 5.229 | 1.772 | 5.121 | 1.666 |
| RELNR2-...is satisfying | 5.257 | 1.725 | 5.089 | 1.821 | 5.266 | 1.765 | 5.205 | 1.705 |
| RELNR3-...is inspiring trust | 5.243 | 1.820 | 5.050 | 1.858 | 5.247 | 1.838 | 5.231 | 1.795 |
| RELNR4-...is fulfilling | 5.269 | 1.800 | 5.089 | 1.889 | 5.298 | 1.788 | 5.220 | 1.750 |
| Quality of the non-romantic relationships (RELNR) | | | | | | | | |
| In general, my non-romantic relationships with the people I interact with on a regular basis... | 4.828 | 1.451 | 4.844 | 1.491 | 5.112 | 1.352 | 5.154 | 1.360 |
| RELNR1-...are enriching | 4.804 | 1.472 | 4.816 | 1.505 | 5.058 | 1.392 | 5.131 | 1.411 |
| RELNR2-...are satisfying | 4.861 | 1.487 | 4.869 | 1.557 | 5.215 | 1.375 | 5.179 | 1.412 |
| RELNR3-...are inspiring trust | 4.789 | 1.567 | 4.804 | 1.671 | 5.018 | 1.483 | 5.128 | 1.443 |
| RELNR4-...are fulfilling | 4.872 | 1.517 | 4.877 | 1.608 | 5.156 | 1.391 | 5.179 | 1.417 |
| Contribution to the community or society (CONT) | | | | | | | | |
| Through my work or otherwise.../Through my studies... | 4.006 | 1.592 | 4.611 | 1.485 | 4.684 | 1.715 | 4.896 | 1.705 |
| CONT1-I have a positive impact on my community or society | 3.947 | 1.710 | 4.450 | 1.618 | 4.571 | 1.767 | 4.847 | 1.733 |
| CONT2-I have something valuable to bring to my community or society | 4.137 | 1.650 | 4.839 | 1.583 | 4.720 | 1.736 | 4.938 | 1.756 |
| CONT3-I believe that I contribute something important to my community or society | 3.958 | 1.756 | 4.645 | 1.660 | 4.684 | 1.769 | 4.887 | 1.772 |
| CONT4-I believe that what I do, brings something important to my community or society | 3.972 | 1.780 | 4.512 | 1.626 | 4.760 | 1.764 | 4.912 | 1.727 |

M = Mean; SD = Standard deviation

to society was assessed through the main field of endeavor (i.e., work) or otherwise. All items of the OFIS, besides physical well-being, were measured using a Likert scale ranging from 1 (“Not agree at all”) to 7 (“Very strongly agree”). Physical well-being was assessed using a scale from 0 (“Mediocre”) to 10 (“Excellent”). Such a bipolar item is common as health items often include poor and good health (e.g., Earnshaw et al., 2016).

6.3.2 Correlates of Optimal Functioning

In addition to the OFIS scale, key correlates of optimal functioning were measured to assess convergent validity.

6.3.2.1 Flourishing The PERMA-Profil (Butler & Kern, 2016) was used to measure participants’ flourishing. This 15-item scale measures flourishing through five 3-item dimensions, which are respectively: positive emotions ($\alpha=0.883$; e.g., *I feel joy*), engagement ($\alpha=0.642$; e.g., *I feel particularly excited or interested in things*), positive relations ($\alpha=0.838$; e.g., *I feel loved*), meaning in life ($\alpha=0.905$; e.g., *I feel I have a sense of direction in my life*), and accomplishment ($\alpha=0.871$; e.g., *I feel I am making progress towards accomplishing my goals*). Participants were asked to assess their level of flourishing in general in their life using a frequency scale ranging from 1 (“Never”) to 5 (“Always”).

6.3.2.2 Emotions The Differential Emotion Scale (Fredrickson, 2009, 2013) was used to measure emotions. This 20-item scale measures two dimensions encompassing both positive (10 items; $\alpha=0.936$; e.g., *interested, alert, or curious*) and negative (10 items; $\alpha=0.911$; e.g., *stressed, nervous, or overwhelmed*) emotions. Participants were asked to evaluate how often they felt a series of three associated emotions during the last two weeks using a frequency scale ranging from 0 (“Never”) to 4 (“Most of the time”).

6.3.2.3 Vitality Subjective vitality was measured using Ryan and Frederick (1997) scale. Participants were asked to evaluate their level of vitality in general through five items ($\alpha=0.966$; e.g., *I feel alive and vital*) using a Likert scale ranging from 1 (“Not agree at all”) to 7 (“Very strongly agree”).

6.3.2.4 Satisfaction With Life Satisfaction with life was measured using three items from Diener et al. (1985) scale. Participants were asked to evaluate their level of satisfaction with their life in general ($\alpha=0.878$; e.g., *I am satisfied with my life*) using a Likert scale ranging from 1 (“Not agree at all”) to 7 (“Very strongly agree”).

6.3.2.5 Physical health Three items were taken from the WHOQL questionnaire (2012) to assess physical health. Participants were asked to evaluate their sleep satisfaction with one item (i.e., *How satisfied are you with your sleep in general*) using a scale from 1 (“Very dissatisfied”) to 5 (“Very satisfied”). Then, two items pertained to how poor health prevented participants from normally functioning in their daily activities. Participants answered the following items using a scale from 1 (“Not at all”) to 5 (“An extreme amount”): “*To what extent does physical pain prevent you from doing what you need to do in your daily life*” and “*To what extent do you need any medical treatment or medicine (pills) to function in your daily life*.” These three indicators were considered individually as 1-item variables.

6.4 Data Analysis

All the analyses presented in this research were conducted on Mplus 8.4 (Muthén & Muthén, 2017) and relied on robust maximum likelihood estimation (MLR), which provides standard errors and fit indices that are robust to non-normality in the presence of missing data. We first tested the OFIS factor structure using an EFA with goemin rotation in order to minimize variable complexity (Sass & Schmitt, 2010; Yates, 1987). The number of underlying factors was decided based on (1) the theoretical adequacy of the factor solution, (2) the presence of eigenvalues higher than one (Tabachnick & Fidell, 2013), and (3) results from a parallel analysis (Horn, 1965). In addition to the Cronbach alpha presented above, internal consistency of the OFIS was verified using McDonald omega (ω ; McDonald, 1970). Finally, convergent validity with the various key correlates was tested using both scale score correlations and latent correlations estimated by a confirmatory factor analysis (CFA).

To account for the oversensitivity of the chi-square test sensitivity to minor misspecifications in larger sample size, we used the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) with its confidence interval (CI) to estimate model adequacy (Marsh et al., 2005). Values equal to or greater than 0.900 and 0.950 respectively indicate an adequate and an excellent fit for CFI and TLI, while RMSEA values equal to or lower than 0.080 and 0.050 respectively indicate an adequate and an excellent fit to the data (Hu & Bentler, 1999; Marsh et al., 2005). The limited number of missing responses (0% to 0.92%) was handled using full information maximum likelihood (Enders, 2010).

7 Results and brief discussion

7.1 OFIS Factor Structure and Reliability

Results from the EFA showed that solutions presenting one to six factors had eigenvalues higher than 1 and thus could be considered as possible factor structures underlying the OFIS scale. The parallel analysis pointed to the same conclusion as solutions from one to six factors presented an eigenvalue that exceeded the averaged eigenvalues generated by the parallel analysis. Among these solutions, the 6-factor solution reflecting the six theoretical dimensions of the OFIS presented the clearest factor structure with high loadings ($0.555 < \lambda < 0.960$) and low cross-loadings on each dimension (all factor loadings are presented in Table S1 of the online supplement accompanying this article). Finally, the 6-factor solution presented the best fit to the data compared to other factor solutions ($\chi^2 [130] = 313.221$, $p \leq 0.05$, CFI = 0.974, TLI = 0.950, RMSEA = 0.057, CI [0.049; 0.065]). This solution explained 85.8% of the total variance. Therefore, the EFA analysis supported the presence of six distinct factors representing the six dimensions proposed for the OFIS scale.¹

¹ We contemplated the possibility that romantic and non-romantic relationships would be represented as a single factor. However, none of the EFA solutions presented a pattern where they were combined. From an empirical standpoint, they seem to represent qualitatively different foci of social well-being.

We then conducted a CFA testing the 6-factor structure of the OFIS scale to obtain the estimates needed to calculate the omega. This CFA also supported the adequacy of the OFIS scale (χ^2 [215]=541.307, $p \leq 0.05$, CFI=0.954, TLI=0.946, RMSEA=0.059, CI [0.053; 0.065]). McDonald omega values supported the internal consistency of each OFIS latent factor: psychological well-being ($\omega=0.906$), physical well-being ($\omega=0.965$), quality of romantic relationships ($\omega=0.976$), quality of non-romantic relationships ($\omega=0.970$), performance ($\omega=0.856$), and contribution to the community or society at large ($\omega=0.943$).

7.2 Convergent Validity with Key Correlates

Convergent validity was tested through correlations between the OFIS subscales and key correlates. We conducted a CFA including the six OFIS dimensions and all the other empirical criteria of convergent validity to generate latent correlations. Specifically, a CFA allows for the investigation of relations among various constructs that are corrected for measurement error. The items pertaining to physical health were considered as three single indicator variables. Results yielded adequate fit to the data (χ^2 [2127]=4226.262, $p \leq 0.05$, CFI=0.911, TLI=0.902, RMSEA=0.048, CI [0.046; 0.050]). Bivariate correlations based on scale scores and latent correlations are presented in Table 2. Overall, support was obtained for the convergent validity of the OFIS scale as each of its dimensions was related to all correlates as expected. If we focus on the relations between each OFIS dimension and correlates indicative of positive functioning, we can make the following observations. Psychological well-being was more highly and positively correlated with the following indicators: positive emotions (i.e., from the PERMA scale and the Differential Emotions Scale), meaning in life, vitality, and satisfaction with life. Physical well-being was highly and positively related to vitality, as this correlate also encompasses somatic elements of physical energy (Ryan & Fredrick, 1997) and was moderately related to quality of sleep. Performance in the occupation was moderately to highly positively related to perceptions of personal accomplishment measured by the PERMA scale. Further, quality of the romantic relationships and quality of the non-romantic relationships were both highly positively related to the positive relationship dimension of the PERMA scale assessing quality of relationships in general. Finally, past research has shown that contributing to the community or society at large is positively associated with indicators of psychological and physical well-being (e.g., Brown et al., 2003; Poulin & Holman, 2013). Thus, we observed in this study that contribution to society was more strongly and positively related to positive emotions (i.e., positive emotions from the Differential Emotions Scale) an affective indicator of psychological well-being. The second strongest positive correlation was observed with vitality, an indicator of psychological well-being and physical health.

Further, results showed that, as expected, there were negative correlations between each of the six OFIS subscales and indicators of ill-being. Specifically, we observe negative correlations between each of the OFIS dimensions and negative emotions from the Fredrickson's Differential Emotions Scale. In addition, indicators of poor health were negatively related with all OFIS dimensions except contribution to society. The highest negative association was obtained with the physical well-being dimension of the OFIS.

Overall, the results from *Study 1* supported the factorial validity of the OFIS scale through both EFA and CFA analyses. Further, reliability analyses showed that all indices were appropriate. Finally, results from scale scores and latent correlations provided support for its convergent validity. Specifically, all OFIS subscales were positively associated with key correlates representing positive aspects of human functioning, while negative

correlations were obtained with negative aspects of human functioning. Overall, these findings provide preliminary support for the validity and reliability of the OFIS scale.

8 Study 2

The purpose of *Study 2* was to further test the validity and reliability of the OFIS scale through two objectives. The first objective was to verify if the OFIS scale factor structure and reliability were upheld in a population with a main endeavor in life other than work, here a sample of students. The second objective consisted in assessing the OFIS scale nomological validity. To offer evidence of nomological validity, Mackenzie et al. (2011) recommend that the constructs measured by a new scale should be integrated in a broader theoretical model by specifying their predicted relations with some of their probable antecedents, mediators, moderators, or outcomes, and then empirically assessing this model.

In a first assessment of nomological validity and in line with the SDT, *Study 2* tested if the OFIS dimensions were related with a known determinant of optimal functioning, basic psychological needs (Ryan & Deci, 2017). According to the SDT, the three basic psychological needs of autonomy, competence, and relatedness act as fundamental factors in the development and the maintenance of optimal functioning (Chen et al., 2015; Deci & Ryan, 2000). Autonomy consists in a feeling of volition and control over one's behaviors, competence in a feeling of being capable of achieving desired outcomes, and relatedness in a feeling of being close and connected with others (Ryan & Deci, 2017). Psychological need satisfaction has been positively associated with each of the six OFIS dimensions, including psychological (e.g., Sulea et al., 2015; Van den Broeck et al., 2016), physical (e.g., Ng et al., 2012), and social well-being (e.g., Patrick et al., 2007; Vanhee et al., 2016), performance (e.g., Cerasoli et al., 2016; Chiniara & Bentein, 2016), and the adoption of pro-social behaviors that contribute to society (e.g., Pavey et al., 2011; Weinstein & Ryan, 2010). Thus, we tested a model in which the three basic psychological needs were set as predictors of the OFIS dimensions, and hypothesized positive relationships between each need satisfaction and all six OFIS dimensions.

9 Method

9.1 Participants and Procedures

A sample of 335 participants from the United States were recruited on the Mechanical Turk website. After providing their informed consent, participants completed an online survey in exchange for a small monetary compensation. All respondents were required to be students. Preliminary screening led to the removal of 74 participants who answered incorrectly to control items. The final sample was composed of 261 participants. Among them, 54.4% were women (142 women, 118 men, 1 unspecified), with an average age of 28.90 years ($SD=7.43$ years). Most participants were completing undergraduate studies (60.2%), graduate studies (26.8%) or postgraduate studies (1.5%). Few were completing a vocational training (1.5%) or a high school diploma (10.0%). They have been enrolled in their program an average of 2.45 years ($SD=1.44$ years). A majority was currently in a romantic relationship (75.1%).

Table 2 Correlates of optimal functioning in society — study 1

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Psychological well-being | – | .418* | .424* | .424* | .518* | .444* | .798* | .630* | .679* | .891* | .767* | .814* | .596* | -.369* | .869* | -.107* | -.132* | .429* |
| 2. Physical well-being | .396* | – | .240* | .265* | .284* | .255* | .413* | .430* | .303* | .406* | .442* | .576* | .257* | -.233* | .412* | -.449* | -.427* | .411* |
| 3. Performance | .358* | .207* | – | .268* | .243* | .234* | .363* | .437* | .356* | .397* | .447* | .436* | .472* | -.412* | .322* | -.188* | -.165* | .154* |
| 4. Quality romantic relationships | -.401* | .255* | .248* | – | .385* | .244* | .504* | .321* | .623* | .461* | .447* | .447* | .214* | -.333* | .489* | -.231* | -.141* | .224* |
| 5. Quality non-romantic relationships | .486* | .274* | .221* | .375* | – | .450* | .582* | .398* | .556* | .487* | .421* | .542* | .363* | -.277* | .551* | -.140* | -.125* | .325* |
| 6. Contribution to society | .423* | .250* | .198* | .233* | .431* | – | .435* | .430* | .374* | .398* | .380* | .461* | .505* | -.131* | .374* | -.040 | -.089 | .274* |
| 7. PERMA – Positive Emotion | .727* | .376* | .311* | .473* | .542* | .400* | – | .748* | .748* | .821* | .767* | .809* | .603* | -.491* | .724* | -.237* | -.243* | .428* |
| 8. PERMA – Engagement | .385* | .263* | .350* | .209* | .259* | .304* | .481* | – | .534* | .657* | .676* | .670* | .608* | -.269* | .512* | -.055 | -.069 | .341* |
| 9. PERMA – Relation | .595* | .263* | .304* | .546* | .516* | .351* | .657* | .325* | – | .800* | .701* | .637* | .429* | -.439* | .695* | -.189* | -.158* | .281* |
| 10. PERMA – Meaning in life | .800* | .376* | .351* | .434* | .460* | .377* | .744* | .449* | .703* | – | .880* | .774* | .539* | -.438* | .749* | -.168* | -.194* | .392* |
| 11. PERMA – Accomplishment | .699* | .417* | .433* | .439* | .402* | .347* | .698* | .466* | .634* | .814* | – | .735* | .542* | -.390* | .698* | -.187* | -.205* | .429* |
| 12. Vitality | .769* | .540* | .390* | .435* | .525* | .445* | .752* | .443* | .578* | .732* | .699* | – | .649* | -.457* | .750* | -.280* | -.276* | .517* |
| 13. DES – Positive emotions | .549* | .238* | .408* | .193* | .336* | .484* | .540* | .442* | .388* | .486* | .477* | .613* | – | -.266* | .494* | .044 | -.011 | .284* |
| 14. DES – Negative emotions | -.337* | -.227* | -.373* | -.318* | -.261* | -.129* | -.455* | -.194* | -.363* | -.413* | -.397* | -.437* | -.232* | – | -.359* | .413* | .389* | -.213* |
| 15. Satisfaction with Life | .795* | .364* | .257* | .458* | .505* | .353* | .638* | .258* | .602* | .670* | .622* | .674* | .446* | -.297* | – | -.159* | -.140* | .419* |
| 16. Pain in daily life | -.102* | -.440* | -.174* | -.227* | -.139* | -.033 | -.226* | -.056 | -.164* | -.166* | -.215* | -.273* | .056 | .396* | -.128* | – | .637* | -.187* |
| 17. Medicine | -.126* | -.411* | -.142* | -.139* | -.123* | -.082 | -.233* | -.030 | -.135* | -.188* | -.221* | -.274* | -.002 | .373* | -.118* | .637* | – | -.176* |
| 18. Sleep satisfaction | .411* | .407* | .120* | .223* | .320* | .265* | .407* | .209* | .260* | .378* | .402* | .510 | .276* | -.218* | .396* | -.187* | -.177* | – |

Correlations based on scale scores are reported below the diagonal; Latent variable correlations from the measurement model are reported above the diagonal

* $p \leq .05$

9.2 Measures

9.2.1 OFIS

The OFIS scale developed in *Study 1* was used in this study, with minor differences in wording as participants evaluated their performance and contribution to their community or society through their studies. Means and standard deviations for the OFIS items and dimensions are presented in Table 1. All dimensions of the OFIS showed adequate internal consistency in this study as assessed with the Cronbach alpha (i.e., psychological well-being, $\alpha=0.923$, physical well-being $\alpha=0.948$, performance $\alpha=0.853$, quality of the romantic relationships $\alpha=0.970$, quality of non-romantic relationships $\alpha=0.956$, contribution to the community or society $\alpha=0.935$).

9.2.2 Basic Need Satisfaction in One's Studies

Participants' basic psychological need satisfaction in their studies was measured with nine items from the Balanced Measure of Psychological Needs scale (Sheldon & Hilpert, 2012). Autonomy ($\alpha=0.788$, e.g., *I am really doing what interests me*), competence ($\alpha=0.886$, e.g., *I take on and master hard challenges*), and relatedness ($\alpha=0.890$, e.g., *I feel close and connected with other people*) were each evaluated by three items. Participants were asked to evaluate their basic need satisfaction using a scale ranging from 1 ("Do not agree at all") to 7 ("Very strongly agree").

9.3 Data Analysis

The same criteria used in *Study 1* were used to estimate the adequacy of the CFA and structural equation model (SEM; Kline, 2015). The limited number of missing responses (0 to 1.92%) was again handled using full information maximum likelihood (Enders, 2010). First, we tested whether the OFIS factor structure was upheld in a sample of students using CFA. McDonald (1970) omega were calculated to further assess the reliability of the OFIS subscale. Then, to assess nomological validity, SEM was used to test the hypothesized model.

10 Results and Brief Discussion

10.1 OFIS Factor Structure and Reliability

Fit indices ($\chi^2 [215]=395.371$, $p \leq 0.05$, CFI=0.960, TLI=0.953, RMSEA=0.057, CI [0.048; 0.065]) and strong factor loadings ($0.743 < \lambda < 0.967$, all factor loadings are presented in Table S2 of the online supplement) from the CFA supported the adequacy of the OFIS 6-factor solution. McDonald omega also suggested a strong internal consistency for each of the OFIS subscale: psychological well-being $\omega=0.923$, physical well-being, $\omega=0.950$; performance $\omega=0.857$, quality of the romantic relationships $\omega=0.971$, non-romantic relationships $\omega=0.957$, and contribution to the community or society at large $\omega=0.936$.

10.2 OFIS Nomological Validity: Basic Psychological Needs

The CFA model including the OFIS dimensions and the three basic needs supported the adequacy of the measurement model (χ^2 [428]=662.104, $p \leq 0.05$, CFI=0.960, TLI=0.954, RMSEA=0.046, CI [0.039; 0.052]). Latent correlations from the CFA and bivariate correlations based on scale scores are presented in Table 3. This measurement model was then transformed in a structural one that yielded an excellent fit to the data (χ^2 [428]=662.104, $p \leq 0.05$, CFI=0.960, TLI=0.954, RMSEA=0.046, CI [0.039; 0.052]).

Results showed that autonomy satisfaction was positively related to physical well-being ($\beta=0.257$, $p \leq 0.05$). Interestingly, autonomy showed marginally significant positive relationships with psychological well-being ($\beta=0.218$, $p=0.088$) and performance in one's studies ($\beta=0.204$, $p=0.051$). Competence satisfaction was positively related to performance ($\beta=0.594$, $p \leq 0.05$) and perceived contribution to the community or society ($\beta=0.380$, $p \leq 0.05$). Finally, relatedness was positively related to psychological well-being ($\beta=0.423$, $p \leq 0.05$), physical well-being ($\beta=0.197$, $p \leq 0.05$), quality of the romantic relationships ($\beta=0.219$, $p \leq 0.05$), quality of the non-romantic relationships ($\beta=0.400$, $p \leq 0.05$), and perceived contribution to the community or society ($\beta=0.268$, $p \leq 0.05$). Variance explained by this model was 37.8% for psychological well-being, 16.5% for physical well-being, 54.8% for performance, 12.1% for romantic relationship quality, 25.3% for non-romantic relationship quality, and 28.6% for contribution to society.

In sum, the present findings first provided additional support for the factorial validity and reliability of the OFIS scale in a sample of students. Second, in accordance with the postulates of SDT (Ryan & Deci, 2017), the fulfillment of the three needs was positively related to global optimal human functioning. However, results support that the satisfaction of each need could play a specific role in the promotion of optimal functioning as shown by the specific pattern of associations.

11 Study 3

Using a longitudinal design, *Study 3* aimed to assess for the third time whether the factorial structure of the OFIS was upheld, as well as testing the temporal consistency of its dimensions over a three-month period. Further, it aimed to offer a second test of nomological validity by studying the directionality of the longitudinal relationships between passion for work and the OFIS scale. The DMP (Vallerand, 2015; Vallerand et al., 2003) defines passion for work as a strong inclination toward this activity that people love, find important and meaningful in their life, in which they will invest a considerable amount of time and energy, and that is a core feature of their identity. Passion taps directly into this widely popular notion in the well-being literature that an individual grows (Vallerand & Rapaport, 2017) and thrive (St-Louis et al., 2021) through the practice of a self-defining intentional activity, which is viewed as a central pathway to optimal functioning (Ryan & Deci, 2001; Sheldon & Lyubomirsky, 2021; Vallerand, 2015; Waterman et al., 2010). Furthermore, the DMP posits that passion for work may take a harmonious or an obsessive form. Harmonious passion occurs when people freely engage in their work purely out of love for it. In contrast, obsessive passion occurs when people engage compulsively in their work not only out of love for it but also because they need it to obtain some contingencies such as social acceptance or self-esteem (Lafrenière et al., 2011; Mageau et al., 2011). The DMP posits

that only harmonious passion should promote optimal functioning. In fact, obsessive passion may undermine functioning or in some case contribute minimally.

Independent studies have shown that harmonious and obsessive passion were respectively positively and negatively associated with psychological well-being (Carpentier et al., 2012; St-Louis et al., 2021), physical health (Schellenberg et al., 2019), and romantic relationships and non-romantic relationships (Philippe et al., 2010; Séguin-Lévesque et al., 2003; Utz et al., 2012; Vallerand et al., 2008). Further, both types of passion result in an intensive engagement in one's endeavor, which may translate to performance. The flexible engagement of harmoniously passionate individuals allows them to continuously maintain their performance at work. Indeed, it has been associated positively with performance (Amarnani et al., 2020; Astakhova & Porter, 2015; Ho et al., 2011). In contrast, the compulsive engagement of obsessively passionate people can lead to higher performance in the short-term, but increase the risks of exhaustion in the long-term making its theorized influence on performance unstable (for a review see Vallerand & Houliort, 2019). Accordingly, inconsistent research has shown that obsessive passion was related positively (Vallerand et al., 2007) and negatively (Bonneville-Roussy et al., 2011; Schellenberg & Bailis, 2016) to performance. Other studies showed no relations (Astakhova & Porter, 2015; Ho et al., 2011). Finally, no studies directly assessed associations between passion and perception of contribution to the community or society. However, passionate individuals have been shown to engage in social causes. Studies showed that people with a harmonious passion for a cause tend to implement socially productive behaviors (e.g., education, sharing, and forgiveness, Rip et al., 2012). In contrast, the compulsive engagement of obsessively passionate people in various causes that contribute to society has been associated with the emergence of radical behaviors (e.g., violent activism, Gousse-Lessard et al., 2013). Those obsessively passionate people might think they contribute to society even though their action may cause harm. Thus, we hypothesized a longitudinal directional order from passion to optimal functioning. Specifically, harmonious passion for work should be positively related to all six OFIS dimensions. Obsessive passion should not show strong relationships with OFIS. However, we can hypothesize that it should be negatively related to psychological, physical, and social well-being. Competing hypotheses can be proposed for the relationship between obsessive passion and performance as well as contribution to society.

12 Method

12.1 Participants and Procedures

This study relied on a two-wave panel design. Participants from the United States were recruited on the Mechanical Turk website. After providing their informed consent, they completed an online survey in exchange for a small monetary compensation. As for *Study 1*, all respondents were required to be full-time workers. A total of 903 participants completed the survey at time 1. Among these participants, 56 were removed from further analysis because they were not full-time workers (31 participants), and/or they did not properly indicate their work (16 participants), and/or they failed to answer correctly to a control item (9 participants). This final sample was composed of 847 participants. Among them, 381 agreed to participate in the second wave three months later. A total of 282 participants answered the survey at time 2. Among them, seven were removed because they failed to answer properly to a test item (5 participants), and/or they were no longer full-time workers

Table 3 Correlations between optimal functioning in society and basic psychological needs – study 2

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Psychological well-being | – | .464* | .337* | .289* | .274* | .546* | .515* | .363* | .580* |
| 2. Physical well-being | .440* | – | .242* | .274* | .304* | .287* | .376* | .238* | .354* |
| 3. Performance | .302* | .212* | – | .232* | .323* | .498* | .583* | .724* | .356* |
| 4. Quality romantic relationships | .285* | .265* | .215* | – | .437* | .229* | .302* | .201* | .322* |
| 5. Quality non-romantic relationships | .271* | .278* | .283* | .424* | – | .329* | .391* | .231* | .490* |
| 6. Contribution the community or society | .510* | .269* | .457* | .232* | .320* | – | .395* | .477* | .409* |
| 7. Basic need satisfaction autonomy | .442* | .330* | .486* | .280* | .342* | .340* | – | .640* | .615* |
| 8. Basic need satisfaction competence | .336* | .222* | .630* | .208* | .219* | .434* | .521* | – | .391* |
| 9. Basic need satisfaction relatedness | .531* | .309* | .319* | .310* | .448* | .388* | .520* | .342* | – |

Correlations based on scale scores are reported below the diagonal; Latent variable correlations from the measurement model are reported above the diagonal

* $p \leq .05$

(2 participants). For the purpose of this study, only participants who answered at both time points were considered. Using multigroup analyses, we showed that there was no difference between respondents who participated only to the first wave and respondents who participated in both waves (results of these analyses are reported in the online supplement). This sample was composed of 275 participants where 54.9% identified as men (123 women, 151 men, 1 other) and with an average age of 41.66 years ($SD = 11.44$ years). They worked on average 40.51 h ($SD = 6.08$ h) per week and had 7.77 years ($SD = 6.69$ years) of tenure in their current job. Most of them (73.8%) were in a romantic relationship.

12.2 Measures

12.2.1 OFIS

The same OFIS scale as in *Study 1 & 2* was used with the minor difference that participants were asked to evaluate their general health on a scale from 1 (“Mediocre”) to 10 (“Excellent”). Once again, all dimensions of the OFIS showed adequate internal consistency as assessed with the Cronbach alpha (i.e., psychological well-being T1 $\alpha = 0.916$, T2 $\alpha = 0.888$; physical well-being $\alpha = 0.982$, T2 $\alpha = 0.975$; performance $\alpha = 0.884$, T2 $\alpha = 0.867$; quality of the romantic relationships $\alpha = 0.983$, T2 $\alpha = 0.979$; quality of non-romantic relationships $\alpha = 0.970$, T2 $\alpha = 0.970$; contribution to the community or society $\alpha = 0.983$, T2 $\alpha = 0.983$).

12.2.2 Passion for work

The Passion scale (Marsh et al., 2013; Vallerand et al., 2003) was administered to assess harmonious (6 items, T1 $\alpha = 0.918$, T2 $\alpha = 0.912$, e.g., *My work is in harmony with the other activities in my life*) and obsessive (6 items, T1 $\alpha = 0.868$, T2 $\alpha = 0.901$, e.g., *My work is so exciting that I sometimes lose control over it*) passion toward work. Participants

were asked to evaluate their passion using a Likert scale ranging from 1 (“Do not agree at all”) to 7 (“Very strongly agree”).

12.3 Data Analysis

The same criteria for model adequacy were used in this study. The limited number of missing responses (0% to 0.73%) was again handled using full information maximum likelihood (Enders, 2010). To support the structural validity and temporal consistency, we started by assessing a CFA model where the OFIS scale measured at both times was considered. In this model, uniquenesses of each item measured at two occasions were allowed to be correlated. To assess time invariance, this model was compared to a more parsimonious one where the factor loadings were fixed to equality between time points (Millsap, 2011). Chen (2007) cut-off criteria were used for nested model comparison. Specifically, models differing by less than 0.010 on CFI and TLI, and less than 0.015 on RMSEA should be considered equivalent. In this situation, the most parsimonious more restrictive model should be retained. When these criteria are exceeded, the best fitting model should be retained as it more adequately represents the data. McDonald (1970) omega were also calculated. Then, the invariant CFA model was converted to an autoregressive one where each OFIS dimension at time 1 predicted itself at time 2.

Next, we assessed the longitudinal relationships between passion for work and the OFIS dimensions using an autoregressive cross-lag model (Grimm et al., 2016). To do so we adopted a model-building approach. First, we specified a single measurement model with measures at both time points where the OFIS was assessed using CFA and the passion scale using exploratory structural equation modeling (ESEM; Morin et al., 2020). Research has shown that ESEM is the most adequate way to model the underlying structure of the Passion scale (Marsh et al., 2013). Second, factor loadings were fixed to equality in a next model to assess time invariance. The invariant model was then transformed into an autoregressive one where each latent factor was allowed to predict itself over time. Finally, in a last model cross-lagged paths were added to the autoregressive ones. Specifically, harmonious and obsessive passion at time 1 were set as predictors of each OFIS dimension at time 2, and each OFIS dimension at time 1 was set as a predictor of both types of passion at time 2.

13 Results and Brief Discussion

13.1 OFIS Factor Structure, Reliability, and Temporal Consistency

Indices from the CFA including the OFIS scale measured at two occasions supported the adequacy of the 6-factor solution ($\chi^2 [900] = 1867.556$, $p \leq 0.05$, CFI = 0.930, TLI = 0.920, RMSEA = 0.063, CI [0.059; 0.067]) and showed strong factor loadings (T1 $0.677 < \lambda < 0.984$; T2 $0.612 < \lambda < 0.980$; all factor loadings are presented in Table S2 of the online supplement). McDonald omega also suggested a strong internal consistency at both times: psychological well-being T1 $\omega = 0.911$, T2 $\omega = 0.873$, physical well-being T1 $\omega = 0.982$, T2 $\omega = 0.975$, performance T1 $\omega = 0.882$, T2 $\omega = 0.875$, quality of the romantic relationships T1 $\omega = 0.983$, T2 $\omega = 0.979$, non-romantic relationships T1 $\omega = 0.971$, T2 $\omega = 0.970$, and contribution to the community or society T1 $\omega = 0.983$, T2 $\omega = 0.983$.

Then, a more parsimonious CFA model where factor loadings across time points were fixed was estimated and showed almost identical fit (χ^2 [917]=1888.077, $p \leq 0.05$, CFI=0.930, TLI=0.921, RMSEA=0.062, CI [0.058; 0.066], $\Delta\chi^2$ (Δdf)=20.521 (17), $p > 0.05$, Δ CFI=0.000, Δ TLI=+0.001, Δ RMSEA=-0.001). Based on Chen's (2007) criteria, time invariance of the OFIS factor structure was supported. This model was then transformed to an autoregressive one, which showed adequate fit (χ^2 [947]=1946.490, $p \leq 0.05$, CFI=0.928, TLI=0.921, RMSEA=0.062, CI [0.058; 0.066]). Regression paths supported the temporal consistency of the OFIS scale over a three-month period (psychological well-being $\beta=0.862$, $p \leq 0.05$, physical well-being $\beta=0.822$, $p \leq 0.05$, performance $\beta=0.693$, $p \leq 0.05$, quality of the romantic relationships $\beta=0.635$, $p \leq 0.05$, non-romantic relationships $\beta=0.511$, $p \leq 0.05$, and contribution to the community or society at large $\beta=0.781$, $p \leq 0.05$).

13.2 OFIS Nomological Validity: Passion for Work

The measurement model including the OFIS dimensions and the two foci of passion for work showed adequate fit to the data (χ^2 [2162]=4081.059, $p \leq 0.05$, CFI=0.911, TLI=0.900, RMSEA=0.057, CI [0.054; 0.059]). As showed by Marsh et al. (2013), correlated uniquenesses between two pairs of items needed to be specified (for details, see the online supplement). A second model estimated with fixed loadings across time points yielded adequate fit (χ^2 [2199]=4125.283, $p \leq 0.05$, CFI=0.910, TLI=0.902, RMSEA=0.056, CI [0.054; 0.059], $\Delta\chi^2$ (Δdf)=44.224 (37), $p > 0.05$, Δ CFI=-0.001, Δ TLI=+0.002, Δ RMSEA=-0.001). Comparisons between these two nested models did not exceed Chen's criteria, thus supporting time invariance. Bivariate correlations based on scale scores and latent correlations extracted from the invariant model are presented in Table 4.

An autoregressive model was then assessed and yielded adequate fit to the data (χ^2 [2253]=4251.446, $p \leq 0.05$, CFI=0.907, TLI=0.900, RMSEA=0.057, CI [0.054; 0.059]). A final, model where cross-lagged paths were added yielded adequate fit (χ^2 [2229]=4164.609, $p \leq 0.05$, CFI=0.910, TLI=0.902, RMSEA=0.056, CI [0.054; 0.059]). Few changes in terms of adequation to the data suggest that the main source of longitudinal associations is horizontal (i.e., autoregressive associations). However, as can be seen in Fig. 1, the cross-lagged model provided valuable information showing that passion could in general be considered a predictor of OFIS, with one exception. Indeed, harmonious passion at time 1 was positively related to psychological and physical well-being, as well as romantic and non-romantic relationships at time 2. Obsessive passion at time 1 showed a negative relation with physical well-being, and small positive relations with performance at work and romantic relationships, all at time 2. Results showed no significant relationship between OFIS dimensions at time 1 and passion, with the sole exception of contribution to the community that was positively related to harmonious passion. Variance explained by this model on variables at time two was 78.7% for psychological well-being, 70.8% for physical well-being, 51.3% for performance, 47.7% for romantic relationship quality, 34.5% for non-romantic relationship quality, 63.2% for contribution to society, 69.5% for harmonious passion, and 62.0% for obsessive passion.

In sum, the present findings first provide additional support for the factorial validity and reliability of the OFIS scale in a sample of workers. Second, they support the temporal stability of the OFIS scale across a three-month period. Finally, results offer a nuanced support to the hypothesized theoretical model. In line with the DMP (Vallerand, 2003, 2015),

having a harmonious passion for work could engage participants on a path of functioning. However, in this study, this path seemed to be limited to psychological, physical, and social well-being. Moreover, it seems that perceiving to make a positive contribution to the community or society could encourage people to develop a harmonious passion. In line with what is observed in the literature, the relationships between obsessive passion and optimal functioning were of lower amplitude. However, contrary to what was expected, obsessive passion was not a generally negative predictor of functioning in this study. The respective positive and negative relations between obsessive passion and performance and physical health are coherent with the DMP (Vallerand, 2015). Showing a more compulsive engagement at work could be detrimental to one's physical health. However, this more intense engagement does not seem to have negative repercussion to one's romantic relationships. Rather, the contrary is supported.

13.3 Generalizability: Measurement Invariance

The last objective of this research was to assess the OFIS scale generalizability. To do so, we tested the OFIS scale's measurement invariance (Millsap, 2011) across various demographic groups with samples from both *Studies 1, 2* and *3*. Invariance testing consists in a series of model comparisons. The first set of model comparisons assess the absence of measurement bias (i.e., the same construct is measured in different populations), which is mandatory and sufficient to conclude in invariance of a scale. The last set of model comparisons tests meaningful differences between groups either in terms of variance/covariance difference and mean-level difference (Millsap, 2011). We hypothesized that the OFIS scale would be fully invariant across main occupations, genders, and age groups. Further, we hypothesized that relationship status does not induce measurement bias, but that a mean difference in quality of past or present romantic relationships should be observed between people with and without a romantic partner.

13.4 Data Analysis

Multigroup analysis was conducted to assess measurement invariance of the OFIS scale (Millsap, 2011). This analysis consisted in the estimation of a sequence of nested CFA models, where the OFIS factor structure was compared between groups. Throughout six models, different parameters were progressively fixed to be equal between groups in the following order: (1) configural invariance (same factor structure), (2) weak invariance (fixed factor loadings), (3) strong invariance (fixed factor loadings and intercepts), (4) strict invariance (fixed factor loadings, intercepts, and uniquenesses), (5) latent variance/covariance invariance (fixed factor loadings, intercepts, uniquenesses, and factors variances/covariances), and (6) latent means invariance (fixed factor loadings, intercepts, uniquenesses, factors variances/covariances, and latent means). Each model was compared with the previous less restrictive one using Chen (2007) cut-off criteria for nested model comparison used previously. If no difference is observed between models up to strict invariance, the multigroup analysis supports the absence of measurement bias. The last two models are not mandatory, as they only check if groups differ in terms of latent variance/covariance or latent means.

We used samples from *Studies 1, 2, and 3 (T2)*² to conduct four separate multigroup analyses. First, *Studies 1 & 2* samples (i.e., workers, 73.1%) were compared to *Study 2* sample (i.e., students, 26.9%) as participants in these studies had different main occupations. Then, we tested invariance across genders (i.e., women [53.5%] and men [46.5%]; only 3 participants did not identify as a woman or a man; therefore this small group could not be included in the analysis), age groups (i.e., median split: 19–34 years [52.3%] and 35–75 years [47.7%]), and relationship status (i.e., currently in a romantic relationship [75.6%] or not [24.4%]). Note that physical well-being was rated on a scale of 0 to 10 in *Studies 1 & 2*, and on a scale of 1 to 10 in *Study 3*. Thus, scores of physical well-being were standardized to ensure comparability between samples.

14 Results and Brief Discussion

Fit indices for the tests of invariance are reported in Table 5. First, no decrease in fit indices exceeding the recommended cut-offs was observed in all model comparisons up to latent means invariance between samples of workers and the sample of students. Thus, results supported full invariance of the OFIS scale between occupations. Further tests supported the full measurement invariance of the OFIS scale across genders and age groups, as no decrease in fit was observed up to latent means invariance. Finally, as hypothesized, results supported the invariance of the OFIS up to the level of variance–covariance invariance across relationship status, suggesting the presence of a mean-level difference across groups, which led to a decrease in fit indices in the latent means invariance model. In invariance testing, for identification purposes, latent means are fixed to zero in the referent group and freely estimated in the comparison group in the variance–covariance model (i.e., model preceding the latent means invariance model). Thus, the means of the comparison group represent estimates of the difference between groups, which are accompanied with statistical significance tests. As predicted, results showed that single participants had a significantly lower mean level of quality of romantic relationships. Thus, a partial mean invariance model was tested, where latent means for quality of the romantic relationships was freely estimated across groups, but all other latent means were fixed to equality. This model did not lead to a decrease in fit indices exceeding the recommended cut-offs.

In sum, the invariance testing conducted with samples from *Studies 1, 2 and 3*, supported the generalizability of the OFIS scale. Absence of measurement bias was supported across occupations, genders, age groups, and relationship status. In addition, no difference was found in inter-individual variability, covariance among dimensions of functioning, and means across occupations, genders, and age groups. For relationship status, results also supported invariance with the only caveat that single people tended to have lower perceptions of quality of their past romantic relationships, indicating a slightly lower level only in this area of functioning.

² In *Study 3*, relationship status was only included at time 2. Thus, data from the second wave was used in the present analysis. Supplementary multigroup analyses comparing participants from *Studies 1, 2, and 3 (T1)* between occupations, genders, and age groups yielded identical conclusions. See the online supplement for the results.

Table 4 Correlations between optimal functioning in society and passion for work — study 3

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Psychological well-being (T1) | — | .444* | .417* | .439* | .382* | .553* | .493* | .166* | .882* | .433* | .425* | .421* | .424* | .476* | .398* | .178* |
| 2. Physical well-being (T1) | .505* | — | .276* | .302* | .271* | .221* | .300* | .117 | .440* | .830* | .304* | .286* | .287* | .193* | .254* | .120 |
| 3. Performance (T1) | .388* | .254* | — | .273* | .339* | .438* | .379* | .112 | .425* | .280* | .703* | .289* | .384* | .298* | .355* | .150* |
| 4. Quality romantic relationships (T1) | .496* | .301* | .282* | — | .385* | .301* | .267* | .019 | .360* | .305* | .306* | .642* | .249* | .209* | .168* | -.024 |
| 5. Quality non-romantic relationships (T1) | .413* | .269* | .328* | .382* | — | .419* | .360* | .049 | .363* | .260* | .343* | .315* | .550* | .353* | .332* | -.009 |
| 6. Contribution the community or society (T1) | .532* | .214* | .420* | .301* | .414* | — | .555* | .295* | .533* | .259* | .362* | .300* | .335* | .792* | .527* | .276* |
| 7. Harmonious passion (T1) | .533* | .300* | .437* | .275* | .379* | .605* | — | .212* | .565* | .358* | .323* | .394* | .396* | .466* | .821* | .167* |
| 8. Obsessive passion (T1) | .146* | .094 | .005 | -.006 | .009 | .243* | .223* | — | .162* | .009 | .200* | .156* | .051 | .294* | .125* | .778* |
| 9. Psychological well-being (T2) | .856* | .481* | .362* | .393* | .369* | .505* | .589* | .119* | — | .466* | .531* | .416* | .479* | .476* | .561* | .251* |
| 10. Physical well-being (T2) | .489* | .814* | .271* | .298* | .253* | .249* | .351* | -.015 | .506* | — | .317* | .309* | .356* | .260* | .350* | .071 |
| 11. Performance (T2) | .406* | .283* | .677* | .307* | .338* | .329* | .390* | .064 | .475* | .306* | — | .336* | .408* | .429* | .395* | .222* |
| 12. Quality romantic relationships (T2) | .450* | .272* | .268* | .631* | .304* | .290* | .393* | .126* | .426* | .292* | .321* | — | .446* | .294* | .334* | .125* |
| 13. Quality non-romantic relationships (T2) | .435* | .283* | .365* | .241* | .533* | .324* | .407* | .020 | .471* | .346* | .400* | .432* | — | .324* | .447* | .091 |
| 14. Contribution the community or society (T2) | .466* | .183* | .268* | .202* | .345* | .783* | .496* | .250* | .447* | .250* | .369* | .287* | .318* | — | .513* | .313* |
| 15. Harmonious passion (T2) | .460* | .258* | .392* | .196* | .355* | .574* | .785* | .125* | .597* | .350* | .434* | .343* | .454* | .552* | — | .249* |
| 16. Obsessive passion (T2) | .181* | .112 | .045 | -.043 | -.024 | .247* | .181* | .711* | .237* | .071 | .092 | .111 | .084 | .295* | .251* | — |

Correlations based on scale scores are reported below the diagonal; Latent variable correlations from the measurement model are reported above the diagonal

* $P \leq .05$

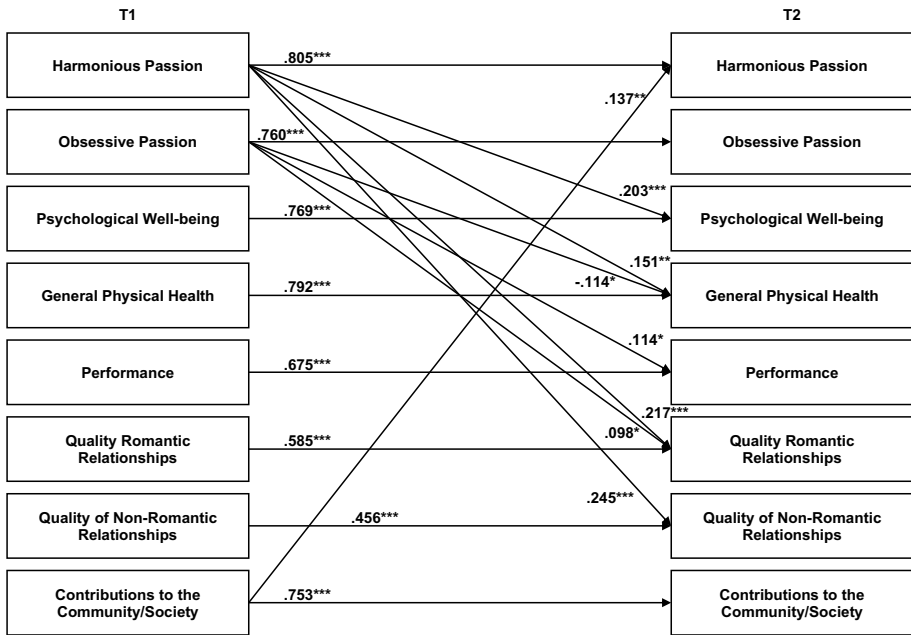


Fig. 1 Standardized relations between passion for work and optimal functioning in society from the autoregressive cross-lagged model. * $p \leq .05$; ** $p \leq .01$; *** $p \leq .01$

15 General Discussion

The main purpose of this research was to develop and validate the OFIS scale. This scale measures optimal functioning in society operationalized as psychological well-being, physical well-being, quality of romantic relationships, quality of the non-romantic relationships, performance in the main field of endeavor, and contributing to one’s community or society at large (Vallerand, 2013). The results of three studies supported the factorial and convergent validity of the OFIS scale, as well as its reliability, its temporal consistency, and its invariance across multiple sociodemographic characteristics. Finally, two studies supported the nomological validity of the OFIS scale. In *Study 2*, results showed that altogether the satisfaction of the three basic psychological needs was positively associated with the OFIS dimensions. Results from *Study 3* supported a nuanced pattern of longitudinal associations between passion for work and the OFIS. These findings lead to several implications.

First, the present findings provide empirical support for the psychometric soundness of the OFIS scale. Indeed, in addition to supporting the factorial validity of the OFIS subscales with EFA and CFA in three samples, the studies reported in this article showed moderate to high intercorrelations among its dimensions and an absence of overly high correlations that would indicate a redundancy. In addition, the OFIS dimensions were shown to be stable over a three-month period and were related to a wide array of well-being criteria. Moreover, invariance tests supported that the OFIS scale allows for the measurement of the same constructs—the six dimensions covered by the OFIS scale—across various sociodemographic groups (i.e., same meaning in different groups), namely main field of endeavor in life (education or work), age groups, genders, and relationship status. Of interest, results

also showed that these sociodemographic groups presented the same levels of functioning across the six OFIS dimensions, with the sole exception of single individuals being less satisfied by their past romantic relationships. In line with Dush and Amato (2005), this specific result suggests that participants adjust their appraisal of their romantic relationship quality as a function of whether they are currently committed to a relationship or not. Overall, this research supports the validity, reliability, and generalizability of the OFIS scale.

Second, the findings of this research are consistent with previous models of well-being and suggest that psychological well-being, relational well-being, performance, and contribution to society are important areas of human functioning that should be considered in well-being conceptualizations (e.g., Diener et al., 2010; Huppert & So, 2013; Keyes, 2005; Ryff, 1989; Seligman, 2011). In line with the WHO's definitions of health, these findings also extend this literature by showing that physical health could also represent an important area of functioning that should be considered along with the traditional dimensions of well-being considered in the flourishing literature. These conclusions are consistent with the epistemological position that well-being is a multidimensional construct in nature that must encompass multiple areas of human functioning (Butler & Kern, 2016; Hone et al., 2014; McGrath et al., 2010; Seligman, 2011; Sheldon, 2004; Vittersø, 2013). Indeed, the results of this research support that the domains of functioning covered by the OFIS scale were empirically distinct yet related to each other and were also almost systematically related to all the other empirical criteria of well-being, which suggests that each dimension of the OFIS may contribute in a formative manner to a global understanding of human functioning. It is also important to mention that we do not claim the OFIS is exhaustive, and that no other dimensions of functioning could be considered. In addition, we do not suggest that all dimensions of the OFIS equally contribute to the understanding of human functioning. For example, psychological and physical well-being could have more weight than one's contribution to the community or society. However, we contend that the dimensions considered in the OFIS model cover the major areas of human functioning. Assessing these dimensions should allow researchers and practitioners to obtain a precise picture of an individual's well-being.

A third implication relates to the SDT (Ryan & Deci, 2017). In coherence with the SDT, results of *Study 2* showed that the satisfaction of all three basic psychological needs could represent an important predictor of optimal functioning. This research suggests that each need is specifically related to different sets of functioning dimensions. Thus, autonomy has shown a positive relationship with physical well-being, and marginal ones with psychological well-being and performance. Similarly, competence could be a vector of positive mental health as defined by the WHO (2001), considering its positive associations with performance and contribution to one's community or society. Finally, satisfying the relatedness need might be the most effective means to foster optimal function if we consider its positive relationships with all the OFIS dimensions but performance. Thus, although all three needs could be important contributors of optimal functioning, they may serve different functions and may lead to specific effects.

A last implication of this research pertains to the contribution of self-defining activities that people are passionate about to optimal functioning. The well-being literature identifies the engagement in intentional self-expressive activities (Martela & Sheldon, 2019; Ryan & Deci, 2001; Waterman et al., 2010) as one of the central determinants of well-being. If some argued that such activity would explain up to 40% of the variance of well-being (Lyubomirsky et al., 2005). Studies have more recently offered a downward estimation of approximately 15% of variance explained (Klug & Maier, 2015; Sheldon & Lyubomirsky, 2021). Results from *Study 3* are in line with this revised estimation and suggest that an

Table 5 Measurement invariance

| Models | χ^2 (df) | CFI | TLI | RMSEA | 90% CI | $\Delta\chi^2$ (Δdf) | ΔCFI | ΔTLI | $\Delta RMSEA$ |
|--|-----------------|------|------|-------|------------|--------------------------------|--------------|--------------|----------------|
| <i>Invariance across occupations</i> | | | | | | | | | |
| Configural invariance | 1203.782 (430)* | .954 | .946 | .061 | .057; .065 | — | — | — | — |
| Weak invariance | 1236.662 (447)* | .953 | .947 | .060 | .056; .064 | 32.880 (17)* | -.001 | +.001 | -.001 |
| Strong invariance | 1292.026 (464)* | .951 | .946 | .061 | .057; .065 | 55.364 (17)* | -.002 | -.001 | +.001 |
| Strict invariance | 1387.170 (487)* | .947 | .945 | .062 | .058; .066 | 95.144 (23)* | -.004 | -.001 | +.001 |
| Variance — covariance invariance | 1429.936 (508)* | .945 | .946 | .061 | .057; .065 | 42.766 (21)* | -.002 | +.001 | -.001 |
| Mean invariance | 1488.520 (514)* | .942 | .943 | .063 | .059; .066 | 58.584 (6)* | -.003 | -.003 | +.002 |
| <i>Invariance across genders</i> | | | | | | | | | |
| Configural invariance | 1262.742 (430)* | .950 | .941 | .063 | .059; .067 | — | — | — | — |
| Weak invariance | 1276.656 (447)* | .950 | .943 | .062 | .058; .066 | 13.914 (17) | .000 | +.002 | -.001 |
| Strong invariance | 1315.110 (464)* | .949 | .944 | .062 | .058; .066 | 38.454 (17)* | -.001 | +.001 | .000 |
| Strict invariance | 1364.755 (487)* | .947 | .945 | .061 | .057; .065 | 49.645 (23)* | -.002 | +.001 | -.001 |
| Variance — covariance invariance | 1384.186 (508)* | .947 | .947 | .060 | .056; .064 | 19.431 (21) | .000 | +.002 | -.001 |
| Mean invariance | 1399.518 (514)* | .947 | .947 | .060 | .056; .063 | 15.332 (6)* | .000 | .000 | .000 |
| <i>Invariance across age groups</i> | | | | | | | | | |
| Configural invariance | 1243.503 (430)* | .951 | .943 | .063 | .059; .067 | — | — | — | — |
| Weak invariance | 1275.169 (447)* | .950 | .944 | .062 | .058; .066 | 31.666 (17)* | -.001 | +.001 | -.001 |
| Strong invariance | 1357.808 (464)* | .946 | .941 | .063 | .059; .067 | 82.639 (17)* | -.004 | -.003 | +.001 |
| Strict invariance | 1505.760 (487)* | .939 | .936 | .066 | .062; .070 | 147.952 (23)* | -.007 | -.005 | +.003 |
| Variance — covariance invariance | 1529.988 (508)* | .939 | .939 | .065 | .061; .068 | 24.228 (21) | .000 | +.003 | -.001 |
| Mean invariance | 1588.110 (514)* | .936 | .937 | .066 | .062; .069 | 58.122 (6)* | -.003 | -.002 | +.001 |
| <i>Invariance across relationship status</i> | | | | | | | | | |
| Configural invariance | 1206.523 (430)* | .952 | .944 | .061 | .057; .065 | — | — | — | — |
| Weak invariance | 1231.591 (447)* | .952 | .945 | .060 | .056; .064 | 25.068 (17) | .000 | +.001 | -.001 |
| Strong invariance | 1291.205 (464)* | .949 | .944 | .061 | .057; .065 | 59.614 (17)* | -.003 | -.001 | +.001 |
| Strict invariance | 1302.513 (487)* | .950 | .948 | .059 | .055; .063 | 11.308 (23)* | +.001 | +.004 | -.002 |
| Variance — covariance invariance | 1354.534 (508)* | .948 | .948 | .059 | .055; .063 | 52.021 (21)* | -.002 | .000 | .000 |

Table 5 (continued)

| Models | χ^2 (<i>df</i>) | CFI | TLI | RMSEA | 90% CI | $\Delta\chi^2$ (Δdf) | ΔCFI | ΔTLI | $\Delta RMSEA$ |
|-------------------------|------------------------|------|------|-------|------------|--------------------------------|--------------|--------------|----------------|
| Mean invariance | 1564.549 (514)* | .935 | .936 | .065 | .061; .069 | 210.015 (6)* | -.013 | -.012 | +.006 |
| Partial mean invariance | 1371.480 (513)* | .947 | .948 | .059 | .055; .063 | 16.946 (5)* | -.001 | .000 | .000 |

Data from *Sample 3* at time 2 was used in these analyses; χ^2 = Chi-square test of exact fit; *df* = Degrees of freedom; CFI = Comparative fit index; TLI = Tucker-Lewis index; RMSEA = Root mean square error of approximation; CI = Confidence interval for the RMSEA; Δ = Change in fit relative to the precedent model

* $p < .05$

activity that someone loves and enjoys, here passion for work, may in some case lead to some well-being, but not systematically to optimal functioning.

In line with the DMP (Vallerand, 2015), results generally supported the presence of longitudinal associations where passion predicts most of the OFIS dimensions. Specifically, harmonious passion for work seems to be a source of well-being, while the picture for obsessive passion is more nuanced. On the one hand, harmonious passion in this study seemed to be a predictor of health according to the WHO (1948), but not positive mental health (WHO, 2001). Indeed, when multiple foci of optimal functioning are considered simultaneously, harmonious passion for work was only related to psychological, physical, and social well-being. On the other hand, obsessive passion showed a negative relationship with physical well-being and a positive one with performance. These observations are coherent with the literature on the DMP by supporting that the compulsive nature of obsessively passionate people might enhance their performance for a while but at the expense here of their physical health. Further, obsessive passion for work was positively associated with the quality of romantic relationships. Interestingly, this result is contrary to what has been observed in the DMP literature (Vallerand, 2015). However, most studies that showed a negative relationship between obsessive passion and variables pertaining to the quality of romantic relationships focused on activities other than work (e.g., passion for the internet, Séguin-Levesque et al., 2003; passion for sports, Vallerand et al., 2008). Passion for work might take a greater share of time in a week compared to passion for other activities. We could hypothesize that in this situation, obsessively passionate workers who compulsively engage in their job might want to prioritize their romantic relationships. Finally, this research brings a new light on the relationship between passion for work and perceived contribution to the community or society. Contrary to our hypothesis, results supported a possible directionality where perception of contribution would lead to a more intense harmonious passion. Thus, workers might be more prone to internalized aspects of their job to their identity and thus develop a harmonious passion if they see that their work is positively impacting society.

16 Limitations and Future Research

The present set of studies provided empirical support for the psychometric validity of the OFIS scale. However, some limitations ought to be taken into consideration. First, *Studies 1 & 2* relied on cross-sectional data. Thus, interpretations inferring directionality are precluded. New studies should explore the longitudinal association between the satisfaction of basic psychological needs and the functioning domains covered by the OFIS. Similarly, new studies should examine if the associations between passion for work and the OFIS dimensions replicate. Further, our aim was to create a short self-report scale. However, self-report may artificially increase the strength of associations between constructs (Podsakoff et al., 2012). Thus, it would be important for future studies to complement the present findings with more objective external sources of assessments for some of the OFIS subscale, such as medical records for physical well-being or external ratings of performance (e.g., grades or performance evaluations). Finally, it would be important to further extend the OFIS nomological network, with other known determinants of well-being such as dispositional traits. This knowledge would greatly contribute to the creation of interventions aimed at promoting optimal functioning in various populations.

In sum, the present research defined OFIS as high levels of psychological and physical well-being, quality of romantic and non-romantic relationships, performance in the main field of endeavor, and contribution to the community or society at large. Results from three studies supported the psychometric soundness of the OFIS scale. It is our firm belief that the multifaceted nature of the OFIS scale will allow researchers and policy makers to obtain a fine-grained comprehension of well-being.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10902-023-00617-7>.

Author contributions All authors contributed to the theoretical conception and design of this research. Data collection was performed by R.J.V., J.V.F., and L.A.C.-P., L.A.C.-P. performed the analysis and wrote the initial draft of the manuscript. All authors contributed to the revision and the improvement of the manuscript.

Funding This research was facilitated by grants from the Canada Research Chair, the Social Science and Humanities Research Council (SSHRC) and by the Fonds de Recherche sur la Société et la Culture (FQRSC) awarded to the second author.

Data availability The raw data supporting the conclusion of this article is available upon request from the authors.

Declarations

Conflict of interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

Consent to participate Participants provided their informed consent to participate in this study.

Ethical approval This research involved human participants and was reviewed and approved by the Comité institutionnel d'éthique de la recherche avec des êtres humains de l'Université du Québec à Montréal

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