

Passion for a Cause: How It Affects Health and Subjective Well-Being

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Abstract

Using the dualistic model of passion (Vallerand et al., 2003), this research investigated how harmonious passion (HP) or obsessive passion (OP) for a cause can affect volunteers' health and subjective well-being. Three studies with volunteers for local (local emergency crises and community help) and international (humanitarian missions) causes assessed physical and psychological health using cross-sectional and longitudinal designs. Study 1 ($N = 108$) showed that HP was positively related to satisfaction with one's involvement in the cause and unrelated to physical injuries due to cause involvement. OP was unrelated to satisfaction but positively associated with injuries. Findings were replicated in Study 2 ($N = 83$). Moreover, self-neglect mediated the positive and negative effects of HP and OP, respectively, on injuries. Study 3 ($N = 77$) revealed that HP predicted an increase in satisfaction and health over a 3-month mission. OP predicted an increase in physical symptoms and a decrease in health. Furthermore, OP before a mission was positively related to self-neglect that was positively associated with physical symptoms after a mission. OP also positively predicted rumination that was conducive to posttraumatic stress disorder. HP was unrelated to these variables. Findings underscore the role of passion for a cause in predicting intrapersonal outcomes of volunteers.

Many people have a strong desire to help make things better in this world. Thus, they may spend a lot of time promoting a cause. Such a cause can be local or international. With local causes, help is provided by assisting with local emergency crises (e.g., fire, flood) or with community help, such as homecare services or education. Causes can also be international in nature, meaning that volunteers travel to help with emergency crises around the world (e.g., humanitarian aid for natural or man-made disasters, health issues). In such causes, help may include first aid and family reunification, as well as providing shelter, food, and clothing. Irrespective of the type of cause, research reveals that people are typically passionate for the cause that they promote (Gousse-Lessard, Vallerand, Carbonneau, & Lafrenière, 2013; Rip, Vallerand, & Lafrenière, 2012). Furthermore, their passion affects the type of behavior emitted to achieve the cause, and such behavior can affect the welfare of others. However, we do not know whether such passion for a cause can have an impact on the health and subjective well-being of volunteers. This is the overall goal of the present research.

The Dualistic Model of Passion

Passion for a cause is defined as a strong inclination toward a self-defining cause that is loved and valued, and in which people invest a significant amount of time and energy (Rip

et al., 2012). The dualistic model of passion (DMP; Vallerand et al., 2003; see Vallerand, 2008, 2010, in press, for reviews) posits that passion has two facets: harmonious and obsessive. Harmonious passion (HP) emerges from an autonomous internalization (Deci & Ryan, 2000) of an activity in one's identity. It takes place when a person engages in the passionate activity with a feeling of choice and without any contingencies attached to it (Sheldon, 2002; Vallerand, 1997). Thus, involvement in the activity is flexible and volitional. In addition, even if the passionate activity has a significant place in the person's identity, it is not overpowering. Therefore, the activity is in harmony with other aspects of the person's life and should lead to adaptive outcomes. An example of HP pertaining to a cause would be people who love and value a specific cause and who have a strong desire to engage in the cause but remain flexible with their involvement and do so simply for the sake of providing help to people in need. In so doing, volunteers should experience several positive outcomes, such as task satisfaction, well-being, and health.

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Conversely, obsessive passion (OP) derives from a controlled internalization (Deci & Ryan, 2000) of the activity in the person's identity. It occurs when the individual feels an uncontrollable urge to partake in the activity that he or she loves. This internal pressure derives from contingencies that are attached to the passionate activity, such as performance, self-worth, and social acceptance. Therefore, involvement in the activity is rigid in nature. The person feels forced to engage in the passionate activity and depends upon the activity. Consequently, the individual experiences conflict between the passionate activity and other areas of his or her life. An example of OP regarding a cause would be volunteers who value and love a cause and cannot help but engage in the cause. Moreover, the cause fulfills a need for recognition that in turn may provide a boost in self-esteem. Such benefits may be experienced at the expense of other personal outcomes, such as one's health and well-being. In sum, the DMP presents two types of passion with two distinct portraits emerging, with HP and OP leading to different psychological and physical outcomes. Furthermore, although the internalization process (i.e., autonomous or controlled) leads to the initial development of a predominant type of passion, both types of passion are nevertheless present within the individual to different degrees. In fact, personal or social factors can temporarily trigger one type of passion or another. Thus, people have features of both harmonious and obsessive passion and can move from one to another in some cases but nevertheless have a predominant type of passion.

Research provides strong support for the DMP and the proposed existence of the two types of passion (see Vallerand, 2008, 2010, in press, for reviews). Moreover, the Passion Scale has been validated and has demonstrated high levels of predictive, discriminant, construct, and external validity, as well as good internal consistency in a number of activities (e.g., Castelda, Mattson, MacKillop, Anderson, & Donovanick, 2007; MacKillop, Anderson, Castelda, Mattson, & Donovanick, 2006; Stenseng, 2008; Vallerand et al., 2003, Study 1; Vallerand, Rousseau, Grouzet, Dumais, & Grenier, 2006, Study 1). In addition, research has also shown that the scale displays invariance as a function of gender, language, and types of activities (Marsh et al., 2013).

Support has also been obtained with respect to the types of outcomes derived from one's activity engagement as a function of the type of passion. Thus, HP has been found to positively predict indices of well-being, such as life satisfaction, meaning in life, subjective well-being, positive emotions, flow, and vitality (e.g., Carpentier, Mageau, & Vallerand, 2012; Lafrenière, Vallerand, Donahue, & Lavigne, 2009; Mageau, Vallerand, Rousseau, Ratelle, & Provencher, 2005; Philippe, Vallerand, & Lavigne, 2009, Study 1; Rousseau & Vallerand, 2003; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Studies 2 and 3; Vallerand et al., 2007, Studies 1 and 2). Conversely, OP has been found to positively predict negative emotions, rumination, anxiety, and depression; to negatively relate to life satisfaction; and to not contribute to subjective

well-being, vitality, and meaning in life (e.g., Mageau et al., 2005; Philippe, Vallerand, Andrianarisoa, & Brunel, 2009, Study 1; Philippe et al., 2009, Study 1; Ratelle, Vallerand, Mageau, Rousseau, & Provencher, 2004; Rousseau & Vallerand, 2003; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Studies 2 and 3; Vallerand et al., 2007, Studies 1 and 2). Of great importance, research by Lafrenière, Vallerand, and Sedikides (2013, Study 2) on the moderating role of passion in the relationship between self-enhancement and life satisfaction implemented a manipulation of harmonious and obsessive passion. One of the findings revealed that experimentally inducing HP led to increases in life satisfaction, whereas inducing OP led to decreases in life satisfaction relative to a control group (see also Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013). Moreover, HP led to greater life satisfaction than OP.

With respect to physical health, research reveals that OP leads to negative effects on one's physical health. This is because individuals with an OP are very rigid with their involvement in the passionate activity and are willing to engage in self-neglect for the sake of it. On the contrary, because people with an HP are flexible with their involvement, they are able to disengage from the passionate activity when needed, and therefore, they prevent the onset of physical health consequences. These assumptions were supported by results from Vallerand et al. (2003, Study 3), where individuals who cycled outside in the winter (a risky behavior in the province of Quebec) reported higher levels of OP. Moreover, results with long-distance runners demonstrated that OP positively predicted perceived susceptibility to injury and was positively related to actual past injuries (Stephan, Deroche, Brewer, Caudroit, & Le Scnaff, 2009). Conversely, HP negatively predicted perceived susceptibility to injury and was not related to previous injuries. In addition, results from Rip, Fortin, and Vallerand (2006) with dancers uncovered that OP was positively related to the number of weeks missed due to chronic injuries, whereas HP was unrelated to chronic injuries. Finally, results from Lafrenière et al. (2009) with individuals passionate for online gaming showed that OP was positively associated with negative physical symptoms, which was not the case for HP. In sum, it appears that OP leads people to neglect their physical health for the sake of the passionate activity, whereas this is not the case for HP.

The Present Research

Only a few studies so far have focused on passion for a cause. Findings revealed that over 90% of people involved in either a political cause (Rip et al., 2012, Study 1) or an environmental cause (Gousse-Lessard et al., 2013, Studies 1–3) were passionate for their cause, had been promoting the cause for years, and were highly involved in cause-related activities. Of greater interest, results from these studies showed that one's type of passion for a cause leads to different types of behavior toward others. Specifically, those with OP were willing to engage in

extreme forms of behavior, such as violence, to make sure that they reach the cause, whereas those with HP engage in adaptive behavior, such as engaging in discussion groups, and shy away from violent behavior.

Such research is important, as it sheds light on the role of passion in promoting a cause and the interpersonal consequences such involvement may have. However, these studies do not provide information on the intrapersonal outcomes related to being involved in a cause, and past research has shown that intrapersonal consequences in fact are derived from volunteering for a cause (Omoto & Snyder, 1995; Snyder & Omoto, 2008). Interestingly, while some research reveals that helping others in need and contributing to society have positive effects on one's physical health and subjective well-being (Boezeman & Ellemers, 2007; Luoh & Herzog, 2002), other research reveals that helpers can experience a deterioration of their physical and psychological health following a mission (Connorton, Perry, Hemenway, & Miller, 2012; Dahlgren, Deroo, Avril, Bise, & Loutan, 2009; Perrin et al., 2007; Putman et al., 2009).

The above research reveals the existence of some inconsistency with respect to the effects of being involved in a cause. Indeed, such research uncovers that both positive and negative effects seem to be experienced by those who volunteer for a worthy cause. We believe that the DMP can help resolve the above paradox and shed light on the positive and negative physical and psychological consequences associated with being involved in a cause. Specifically, what are the effects of having HP or OP for a cause on one's physical health and subjective well-being? In line with past research (e.g., Lafrenière et al., 2009; Ratelle et al., 2004; Rip et al., 2006; Rousseau & Vallerand, 2003; Stephan et al., 2009; Vallerand et al., 2003, Study 1; Vallerand et al., 2006, Studies 2 and 3; Vallerand et al., 2007, Studies 1 and 2), it is hypothesized that engaging in activities related to one's cause out of HP should promote, while engaging in such activities out of OP should undermine, one's physical health and subjective well-being.

The main goal of this research was to test this basic hypothesis in three studies. Study 1 used a cross-sectional design to examine the role of passion in the satisfaction with one's involvement in the cause and physical injuries related to such involvement. Study 2 used a cross-sectional design and further explored the associations between passion and satisfaction with involvement in the cause and physical injuries related to involvement in the cause, this time with individuals who just came back from an international mission. Self-neglect during the mission was also included as a potential mediator of the relationship between passion and physical injuries related to involvement in the cause. Because it leads to rigid involvement in the cause, it was hypothesized that OP should lead one to engage in the cause-related activities when this can be harmful (self-neglect), therefore leading to health problems. HP was not expected to foster self-neglect, as it promotes a more adaptive form of activity engagement. Finally, Study 3 used a different set of individuals involved in international causes,

this time using a longitudinal design. Such a design allowed us to look at changes in physical health and subjective well-being over time as a function of one's passion for the cause.

STUDY 1

The purpose of Study 1 was to examine how HP and OP for a cause relate to physical and psychological outcomes. In line with previous research (e.g., Lafrenière et al., 2009; Rip et al., 2006; Rousseau & Vallerand, 2008; Stephan et al., 2009; Vallerand et al., 2003, Study 1), HP for a cause was hypothesized to be positively related to satisfaction with involvement in the cause, and OP was expected to be unrelated to this outcome. In addition, OP was expected to positively predict physical injuries related to involvement in the cause, whereas HP was expected to be unrelated to physical injuries.

Method

Participants and Procedure. Participants were 108 French Canadian individuals (81 females, 27 males) involved in local causes (e.g., first aid and local disaster management, suicide prevention, support for AIDS victims). Age ranged from 19 to 80 years ($M = 31.44$, $SD = 14.75$). Participants reported engaging in their cause on average for 5.60 hours ($SD = 4.90$) per week. On average, they had been doing so for 5.88 years ($SD = 7.35$). Overall, 82.4% of participants were identified as being passionate for their cause because they had a mean score equal to or higher than 4 on the passion criteria items (see the Instruments section). Participants were recruited through local cause organizations, where the directors of each organization sent invitations to their volunteers to complete an online survey.

Instruments.

Demographic Variables. Participants completed a demographic information section that included questions on gender, age, and mother tongue as well as questions on their involvement in a cause (e.g., the number of weekly hours spent engaging in the cause).

Passion for a Cause. The Passion Scale (Vallerand et al., 2003) was used to assess passion for one's cause. This scale is composed of two six-item subscales assessing harmonious and obsessive passion toward an activity (here, one's cause). A sample item for HP is "Providing local aid is in harmony with the other activities in my life," and a sample item for OP is "I have almost an obsessive feeling for providing local aid." Past research has repeatedly supported the validity and reliability of the Passion Scale (Marsh et al., 2013; Vallerand, 2008, 2010). In the present study, Cronbach's alpha values for the HP and OP subscales were, respectively, .80 and .84. Passion criterion items were also assessed: "I dedicate a lot of time to this cause," "I love this cause," "This cause is important for me,"

“This cause is a passion for me,” and “This cause is part of who I am” ($\alpha = .71$). Responses to all items were scored on a 7-point Likert scale ranging from 1 (*Do not agree at all*) to 7 (*Very strongly agree*).

Satisfaction With Involvement in the Cause. Satisfaction with involvement in the cause was assessed with four items from the French Canadian version (Blais, Vallerand, Pelletier, & Brière, 1989) of the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), adapted to one’s involvement in a cause for this study. The items were measured on a 7-point Likert scale ranging from 1 (*Do not agree at all*) to 7 (*Very strongly agree*). A sample item is “I am satisfied with the local aid I provide” ($\alpha = .83$).

Physical Injuries Related to Involvement in the Cause. Participants were asked how often they experienced physical injuries related to their involvement in the cause. Responses were scored on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Almost always*). A total of 23.1% of participants reported physical injuries related to their involvement in the cause.

Results and Discussion

Preliminary Analyses. Means and standard deviations of the different variables are presented in Table 1, and the correlation table is available upon request. We first examined whether men and women scored differently on the study variables. Analyses revealed no significant differences between men and women on HP, $F(1, 107) = 2.64, ns$; OP, $F(1, 107) = .47, ns$; satisfaction with involvement in the cause, $F(1, 107) = .01, ns$; and physical injuries related to involvement in the cause, $F(1, 108) = .93, ns$. Therefore, gender was not considered in further analyses.

Because the two types of passion were correlated with one another ($r = .20, p < .05$), regression analyses were conducted to control for the common variance between the two types of passion. OP was positively related to number of years of engagement in the cause ($r = .23, p < .05$) and number of weekly hours spent engaging in the cause ($r = .32, p < .001$). Physical injuries related to involvement in the cause were also positively related to number of weekly hours spent engaging in the cause ($r = .24, p < .05$). Therefore, number of years of engagement in the cause and number of weekly hours spent engaging in the cause were added as predictors along with HP and OP in the regression analyses.

Multiple Regression Analyses. As shown in Table 2, controlling for OP, number of years of engagement in the cause, and weekly hours spent engaging in the cause, HP was found to positively predict satisfaction with involvement in the cause ($\beta = .64, p < .001$), but it did not significantly predict physical injuries related to involvement in the cause ($\beta = -.08, ns$). In contrast, controlling for HP, number of years of engagement in the cause, and weekly hours spent engaging in the cause, OP did not significantly predict satisfaction with involvement in the cause ($\beta = -.03, ns$), but it positively predicted physical injuries related to involvement in the cause ($\beta = .29, p < .01$).

The results of Study 1 provided initial support for the hypotheses. Specifically, results revealed that HP was positively related to satisfaction with involvement in the cause while not being related to physical injuries related to involvement in the cause. In contrast, OP was found to positively predict physical injuries while being unrelated to satisfaction with involvement in the cause. Importantly, these results were obtained while controlling the number of years of involvement in the cause and weekly hours spent engaging in the cause.

Table 1 Studies 1–3: Means and Standard Deviations for Each Subscale

Subscale	Study 1		Study 2		Study 3			
					Time 1		Time 2	
	M	SD	M	SD	M	SD	M	SD
Harmonious passion	5.77	(.75)	5.83	(.75)	5.63	(.93)	5.72	(1.05)
Obsessive passion	2.33	(1.14)	2.49	(1.26)	2.55	(1.19)	2.08	(1.05)
Satisfaction with involvement in the cause	5.37	(1.02)	5.21	(1.06)	5.02	(.96)	5.12	(1.15)
Physical injuries	1.39	(.84)	1.18	(.73)	—	—	—	—
Self-neglect	—	—	1.99	(.76)	—	—	2.69	(1.42)
Physical symptoms	—	—	—	—	2.57	(.80)	2.37	(.92)
General health indicator	—	—	—	—	7.84	(1.45)	7.66	(1.86)
Rumination	—	—	—	—	2.29	(1.25)	—	—
PTSD	—	—	—	—	—	—	1.33	(.40)

Note. PTSD = posttraumatic stress disorder. Items in subscales were measured using Likert-type scales ranging from 1 (*Do not agree at all*) to 7 (*Very strongly agree*) for harmonious and obsessive passion, satisfaction with involvement in the cause, and rumination; ranging from 1 (*Never*) to 7 (*Almost always*) for physical injuries, self-neglect, and physical symptoms; ranging from 1 (*Poor*) to 10 (*Excellent*) for general health indicator; and ranging from 1 (*Never*) to 5 (*Extremely*) for PTSD.

Table 2 Study 1: Regression Analyses for Variables Predicting Satisfaction With and Injuries Related to Involvement in the Cause

Variable	Satisfaction With Involvement in the Cause				Physical Injuries Related to Involvement in the Cause			
	B	SE B	β	R ²	B	SE B	β	R ²
Harmonious passion	.786	.095	.636**	.415	-.049	.060	-.077	.129
Obsessive passion	-.018	.059	-.026		.107	.037	.293*	
Number of years	.005	.004	.095		-.002	.002	-.076	
Number of weekly hours	-.001	.006	-.007		.006	.004	.157	

Note. $N = 108$. Number of years = number of years of engagement in the cause; Number of weekly hours = number of weekly hours spent engaging in the cause.
* $p < .01$. ** $p < .001$.

STUDY 2

The purpose of Study 2 was twofold. First, while interesting, results from Study 1 were limited to volunteers for local causes. Thus, this study aimed at replicating the results of Study 1, but this time with participants engaged in international causes (i.e., humanitarian missions overseas). A second purpose of Study 2 was to investigate self-neglect during the mission as a potential mediator of the relationship between OP and physical injuries related to involvement in the cause. This is because for people with an OP, the cause is so important that one should be willing to suffer a great deal for it, even to the detriment of one's health. Thus, to the same extent that people with OP for a political or environmental cause (Gousse-Lessard et al., 2013; Rip et al., 2012, Study 1) come to neglect other people and engage in extreme and radical forms of interpersonal behavior in attempting to reach their cause, it is believed that people with OP may also engage in extreme forms of self-neglect behavior (e.g., lack of sleep, poor nutrition) to reach the cause. Although the cause is also important for people with HP, there is a limit that they are not willing to cross, and it involves their health. In line with the results of Study 1 and consistent with previous research (e.g., Rip et al., 2006; Rousseau & Vallerand, 2008; Stephan et al., 2009; Vallerand et al., 2007, Studies 1 and 2), we hypothesized that HP and OP for a cause would be, respectively, negatively and positively associated with self-neglect during the mission that, in turn, would positively predict physical injuries. In addition, HP was expected to be positively related to satisfaction with involvement in the cause, but not OP.

Method

Participants and Procedure. Participants were 83 French Canadian individuals (77% females) involved in international causes who provided humanitarian assistance, medical care, help with the development of different projects in order to counter poverty and injustice in the world, and so on. Mean age was 29.65 years ($SD = 12.20$). Participants reported that their last humanitarian mission had lasted an average of 7.31 months ($SD = 4.01$). A total of 90.4% of participants were passionate for their cause according to the passion criteria

($\alpha = .83$). Participants were recruited through international humanitarian aid organizations. The directors of each organization were contacted and asked to send email invitations to their volunteers, following a humanitarian aid mission, with a link to complete an online survey.

Instruments.

Demographic Variables. Participants completed a demographic information section that included questions on gender, age, and mother tongue as well as questions on their involvement in the cause.

Passion for a Cause. The same scale as in Study 1 was used again. In the present study, Cronbach's alphas of the HP and OP subscales were, respectively, .76 and .87.

Satisfaction With Involvement in the Cause. The same scale as in Study 1 was used. In the present study, Cronbach's alpha was .71.

Injuries Related to Involvement in the Cause. As in Study 1, participants were asked how often they experienced physical injuries related to their involvement in the cause. A total of 9.6% of participants reported physical injuries related to involvement in the cause.

Self-Neglect. Two items were used to assess self-neglect behavior during the last humanitarian mission, such as "Did you take risks that could have put your life in danger?" ($\alpha = .72$). Responses were scored on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Almost always*). A total of 49.4% of participants reported self-neglect behaviors.

Results and Discussion

Preliminary Analyses. Means and standard deviations of the different variables are presented in Table 1, and the correlation table is available upon request. We first examined whether men and women scored differently on the study variables. Analyses revealed no significant differences between men and women on OP, $F(1, 67) = 1.27$, *ns*; satisfaction with involvement in the cause, $F(1, 67) = .49$, *ns*; self-neglect, $F(1, 67) = 1.01$, *ns*; and physical injuries related to involvement in the cause,

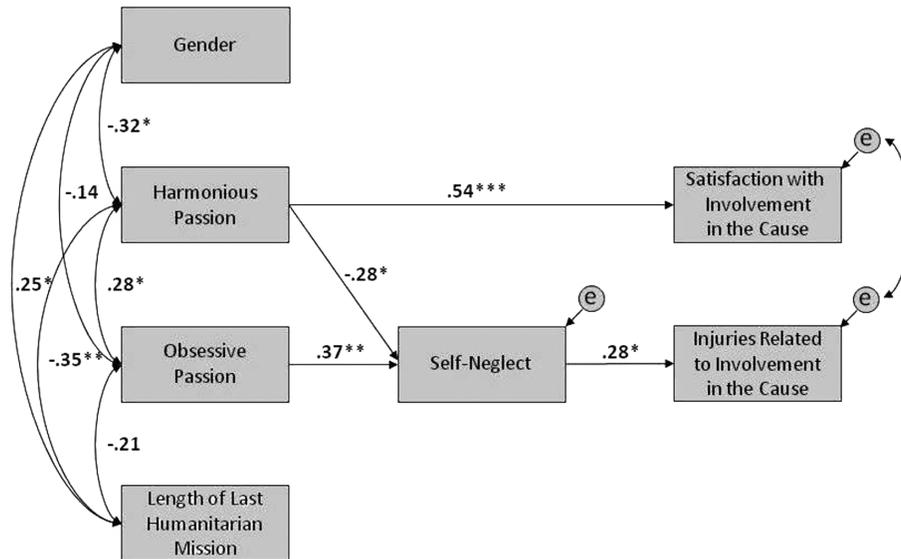


Figure 1 Study 2: Results of the structural equation modeling analyses. Standardized path coefficients are presented. $N = 83$. * $p < .05$. ** $p < .01$. *** $p < .001$.

$F(1, 67) = .17$, *ns*. However, women were found to report higher levels of HP, $F(1, 67) = 7.69$, $p < .01$, than men. Gender will therefore be controlled in further analyses.

Structural Equation Modeling Analyses. All structural equation modeling analyses were performed on a raw data file using the maximum likelihood estimation procedure (EQS version 6.1; Bentler, 1995). The model tested was composed of four exogenous variables (i.e., HP, OP, gender, and length of last humanitarian mission) and three endogenous variables (i.e., satisfaction with involvement in the cause, self-neglect during the mission, and physical injuries related to involvement in the cause). To test the hypothesized model, a path analysis was conducted and paths were drawn according to the hypotheses presented above. First, paths from both HP and OP to self-neglect and one from self-neglect to physical injuries were specified. Second, a path from HP to satisfaction was specified. The four exogenous variables were allowed to covary, as well as satisfaction with involvement in the cause and physical injuries error terms. The model had a satisfactory fit to the data. The chi-square value was nonsignificant, $\chi^2(df = 10, N = 68) = 5.57$, *ns*, and other fit indices were adequate: NFI = .92, CFI = 1.0, GFI = .98, SRMR = .05, and RMSEA = .00 [.00, .07].

The standardized solutions of the final model are presented in Figure 1. HP ($\beta = -.28$, $p < .05$) and OP ($\beta = .37$, $p < .01$), respectively, negatively and positively predicted self-neglect, which, in turn, positively predicted injuries ($\beta = .28$, $p < .05$). In addition, HP was found to positively predict satisfaction with involvement in the cause ($\beta = .54$, $p < .001$). Bias-corrected, bootstrapped 95% confidence interval estimates indicated that self-neglect was a significant mediator of the relationship between HP and physical injuries, $p < .05$, CI

$[-.222, -.008]$, as well as of the relationship between OP and physical injuries, $p < .05$, CI [.018, .238].

The results of Study 2 provided support for the hypotheses. Specifically, while controlling for gender and the length of the last humanitarian mission, HP and OP were, respectively, found to negatively and positively predict self-neglect, which, in turn, was conducive to physical injuries related to involvement in the cause. In agreement with Study 1, the results of Study 2 also showed that HP was positively related to satisfaction with involvement in the cause, whereas OP was not significantly related to this outcome. Thus, in line with the DMP, these findings revealed that being heavily involved in a cause may lead to either adaptive or maladaptive outcomes to the person providing help, depending on the type of passion that is in operation.

STUDY 3

There were three purposes for Study 3. First, using a cross-lagged panel model, Study 3 sought to extend the findings of Studies 1 and 2 and test whether passion assessed before an international mission could predict changes in physical health and subjective well-being outcomes once the mission is completed. In line with the findings of Studies 1 and 2 as well as research using experimental inducements of passion (Bélanger et al., 2013; Lafrenière et al., 2013, Study 2), it was hypothesized that HP would predict increases and OP decreases in health and subjective well-being. Using cross-lagged panel analyses also allowed us to focus on a second purpose dealing with the direction of effects between passion and outcomes. Past research has shown that passion predicts changes in outcomes, whereas outcomes do not predict changes in passion (e.g., Carbonneau, Vallerand, Fernet, & Guay, 2008; Lavigne,

Forest, & Crevier-Braud, 2012). Thus, it was predicted that passion would be a better predictor of changes in physical and psychological outcomes than the other way around. A third and final purpose of Study 3 was to further examine potential mediators of the relationships between OP and negative outcomes resulting from one's involvement in a cause. In line with Study 2, OP was expected to lead to self-neglect, which, in turn, was anticipated to predict negative physical symptoms. HP was expected to be negatively related or unrelated to these variables. In addition, we looked at the role of rumination as a mediator of the effects of OP in posttraumatic stress disorder (PTSD). Much research reveals that PTSD is often experienced by humanitarian helpers (Connorton et al., 2012; Perrin et al., 2007; Putman et al., 2009). Thus, in line with past research on the positive relationship between passion and rumination (e.g., Ratelle et al., 2004; Vallerand et al., 2003, Study 1) as well as that between rumination and PTSD (Birrer & Michael, 2011; Ehring, Frank, & Ehlers, 2008; Michael, Halligan, Clark, & Ehlers, 2007; Nolen-Hoeksema & Morrow, 1991), it was expected that OP would lead to rumination about the mission, which, in turn, should be conducive to PTSD. No link was expected with respect to HP and rumination or PTSD.

Method

Participants and Procedure. Participants were 77 French Canadian individuals (68 females, nine males) involved in international causes who offered help with emergencies and disasters worldwide (e.g., medical care, project development to counter poverty). Age ranged from 17 to 64 years ($M = 25.33$, $SD = 11.07$). On average, the length of participants' humanitarian mission was 8.9 weeks ($SD = 5.11$). According to the passion criteria ($\alpha = .82$), 89.6% of participants were passionate for their cause. Participants were recruited through international organizations. Specifically, research assistants contacted the directors of each organization, who sent a first invitation to complete an online survey to their volunteers a week before they left for an international mission and a second invitation for another online questionnaire to complete when they returned home.

Instruments.

Demographic Variables. Participants completed demographic information that included questions on gender, age, and mother tongue as well as questions on their involvement in humanitarian aid.

Passion for a Cause. The same scale as in Studies 1 and 2 was used. In the present study, Cronbach's alphas of the HP and OP subscales were, respectively, .83 and .86 at Time 1, and .88 and .84 at Time 2.

Satisfaction With Involvement in the Cause. The same scale as in Studies 1 and 2 was used again. Cronbach's alpha for this study was .72 at both Time 1 and Time 2.

Physical Symptoms. Physical symptoms were assessed using a physical symptom checklist composed of 13 items (i.e., headaches, dizziness, stomach pain; $\alpha = .84$ at Time 1 and .87 at Time 2) adapted from an instrument developed by Knäuper, Rabiau, Cohen, and Patriciu (2004). Using a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Almost always*), participants were asked before leaving for their mission how often they experience those physical symptoms in general, and, upon their return home, they were asked how often they had experienced these symptoms since their departure.

General Health Indicator. Before and since departure, participants were asked to evaluate globally on a 10-point Likert scale ranging from 1 (*Poor*) to 10 (*Excellent*) their physical health using the General Health Index (Vallerand, O'Connor, & Hamel, 1995). Such a measure has been found to strongly correlate with objective measures of overall physical health (Lundberg & Manderbacka, 1996; Miilunpalo, Vuori, Oja, Pasanen, & Urponen, 1997).

Rumination. Rumination was assessed before departure using an adapted version of the Rumination on Sadness Scale (Conway, Csank, Holm, & Blake, 2000; see also Carpentier et al., 2012). Participants were asked to what extent they agree with statements such as "In general, when I am doing other things than providing humanitarian aid, I repeatedly analyze and keep thinking about humanitarian aid" (four items; $\alpha = .89$), using a 7-point Likert scale ranging from 1 (*Don't agree at all*) to 7 (*Very strongly agree*).

Self-Neglect. Self-neglect during participants' last humanitarian mission was measured upon their return home using three items different from Study 2 ($\alpha = .75$) that were tailored to the mission that had taken place: ("During your last mission . . .") ". . . did you work extra hours?" ". . . did you neglect your sleeping time for the sake of your mission?" and ". . . did you neglect your health for the sake of your mission?" Responses were scored on a 7-point Likert scale ranging from 1 (*Never*) to 7 (*Almost always*). A total of 83.1% of the participants reported self-neglecting behaviors.

PTSD. Posttraumatic stress disorder was assessed after the humanitarian aid mission using the PTSD Checklist (civilian version for *DSM-IV*; Weathers, Litz, Herman, Huska, & Keane, 1994). First, participants were asked to recall and describe in one sentence a stressful experience that occurred during their last mission. Next, they had to indicate on a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Extremely*) how much they have experienced problems in response to the stressful experience. The scale contains 17 items ($\alpha = .85$), and a sample item is "Repeated, disturbing memories, thoughts, or images of the stressful experience."

Results and Discussion

Preliminary Analyses. Means and standard deviations are presented in Table 1, and the correlation table is available upon request. We first examined whether men and women scored differently on the study variables. Analyses revealed no significant differences between men and women on HP at T1, $F(1, 76) = 1.83, ns$; OP at T1, $F(1, 76) = 0.69, ns$; OP at T2, $F(1, 76) = 3.67, ns$; satisfaction with involvement in the cause at T1, $F(1, 76) = 2.05, ns$; physical symptoms at T2, $F(1, 76) = 0.32, ns$; general health at T1, $F(1, 76) = 0.12, ns$; general health at T2, $F(1, 76) = 1.82, ns$; and rumination, $F(1, 76) = 2.41, ns$. However, men were found to report higher levels of HP at T2, $F(1, 76) = 6.66, p < .05$; marginally more OP at T2, $F(1, 76) = 3.67, p < .06$; more satisfaction with involvement in the cause at T2, $F(1, 76) = 4.13, p < .05$; marginally less physical symptoms at T1, $F(1, 76) = 3.86, p < .06$; marginally more self-neglect, $F(1, 76) = 3.88, p < .06$; and marginally more PTSD, $F(1, 76) = 3.48, p < .07$, than women. Gender will therefore be controlled in further analyses.

Structural Equation Modeling Analyses.

Cross-Lagged Panel Model. All structural equation modeling analyses were performed on a raw data file using the maximum likelihood estimation procedure (EQS version 6.1; Bentler, 1995). The model tested was composed of six exogenous variables (i.e., HP, OP, satisfaction with involvement in the cause, physical symptoms, and general health indicator at Time 1, as well as gender) and five endogenous variables (i.e., the same first five variables, but at Time 2).

A first model was tested, and paths were designed according to the hypotheses presented above. Thus, a total of 11 paths were specified: one between each variable at Time 1 and its equivalent at Time 2, one between HP at Time 1 and each outcome (i.e., satisfaction with involvement in the cause, physical symptoms, and general health) at Time 2, and one between OP at Time 1 and the outcomes at Time 2. We estimated the covariances between the six exogenous variables at Time 1, as well as the covariances between the error terms at Time 2. For clarity concerns, we omitted error terms covariances in Figure 2. The results showed that this model did not have an acceptable fit to the data. On the basis of the Lagrange and Wald tests that we conducted, paths that were far from significant were removed, and a path from physical symptoms at T1 to HP at T2 was added. The results showed that this modified model had an acceptable fit to the data, $\chi^2(df = 20, N = 77) = 26.07, ns$; CFI = .98; NFI = .92; SRMR = .06; RMSEA = .06 [.00, .12].

The standardized solutions are presented in Figure 2. Each variable at Time 1 was strongly and positively associated with its equivalent at Time 2 (β s ranging from .41 to .64, $ps < .001$), except for satisfaction with involvement in the cause. For this latter variable, a nonsignificant beta of .10 was found between the Time 1 and Time 2 measures. HP at Time 1 was found to predict increases in both satisfaction with involvement in the cause ($\beta = .40, p < .001$) and general health ($\beta = .17, p < .10$). In addition, OP at Time 1 was found to predict increases in physical symptoms ($\beta = .20, p < .05$) and decreases in general health ($\beta = -.27, p < .01$). There was no link between HP and physical symptoms.

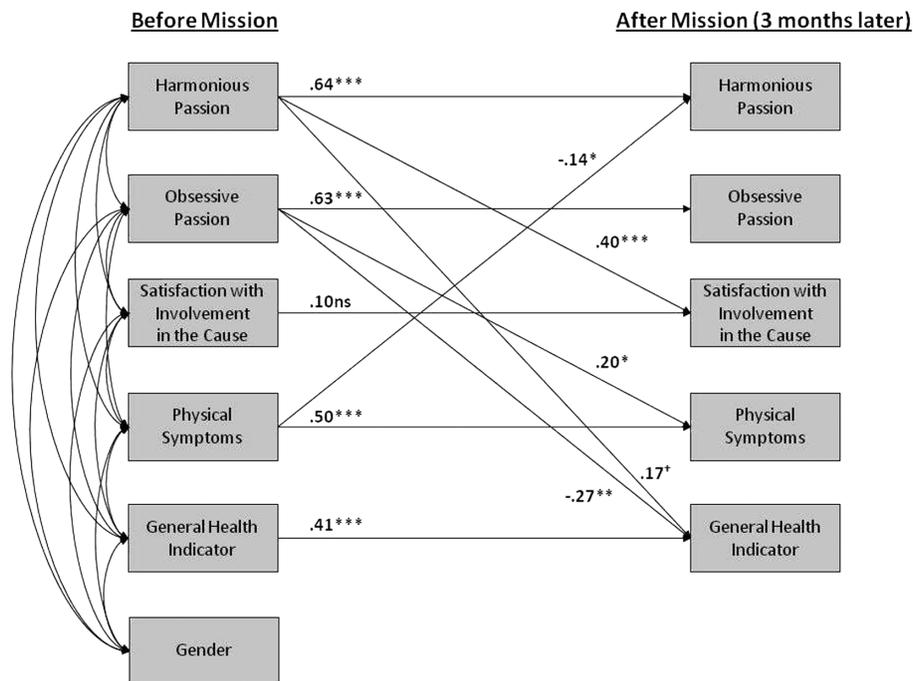


Figure 2 Study 3: Results of cross-lagged panel model. Standardized path coefficients are presented. $N = 77$. $^{\dagger}p = .10$. $*p < .05$. $**p < .01$. $***p < .001$.

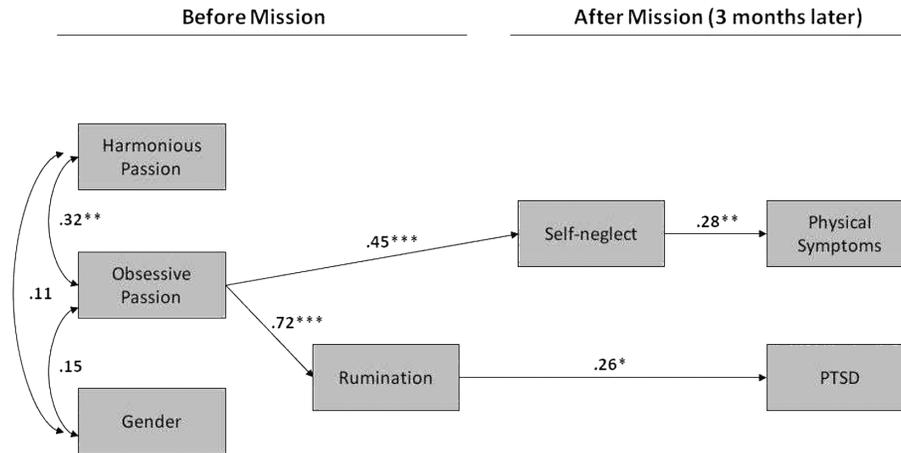


Figure 3 Study 3: Results of path analysis. Standardized path coefficients are presented. $N = 77$. * $p < .05$.

Path Analysis Involving Passion, Mediators, and Negative Health Outcomes.

Means and standard deviations of the different variables are presented in Table 1. The model tested was composed of three exogenous variables (i.e., HP, OP, and gender) and four endogenous variables (i.e., self-neglect, physical symptoms, rumination, and PTSD), and paths were drawn according to the hypotheses presented above. Thus, four paths were specified: one from OP to self-neglect, one from self-neglect to physical symptoms, one from OP to rumination, and one from rumination to PTSD. We estimated the covariances between the three exogenous variables, the covariance between the error terms of the two mediators (i.e., self-neglect and rumination), and the covariance between the error terms of the two outcomes (i.e., physical symptoms and PTSD). For clarity concerns, we omitted the covariances between the endogenous variables' error terms in Figure 3. The results showed that this model had an acceptable fit to the data, $\chi^2(df = 12, N = 77) = 10.03, ns$; CFI = 1.0; NFI = .92; SRMR = .07; RMSEA = .00 [.00, .10].

The standardized solutions are presented in Figure 3. OP was found to positively predict self-neglect ($\beta = .45, p < .001$), which, in turn, positively predicted physical symptoms ($\beta = .28, p < .01$). OP was also found to positively predict rumination ($\beta = .72, p < .001$), which, in turn, positively predicted PTSD ($\beta = .26, p < .05$). HP was unrelated to the mediators and outcomes. In addition, bias-corrected, bootstrapped 95% confidence interval estimates confirmed the significance of the mediation of self-neglect between OP and physical symptoms, $p < .05$, CI [.021, .214] as well as the significance of the mediation of rumination between OP and PTSD, $p < .05$, CI [.004, .398].

The results of Study 3 globally provided support for the hypotheses. Results of a cross-lagged panel model revealed that HP at Time 1 predicted increases in satisfaction with one's involvement in the cause as well as in general health. Conversely, OP at Time 1 predicted increases in physical symptoms and a decrease in one's general health condition. Other

analyses showed that OP was related to self-neglect, which predicted physical symptoms. In addition, OP predicted rumination, which, in turn, was conducive to PTSD. In sum, the type of passion for one's cause predicted changes in outcomes 3 months later, with HP leading to adaptive outcomes and OP leading to less adaptive and even to maladaptive outcomes such as physical symptoms and PTSD. Of additional importance, in line with the hypotheses, outcomes were either unrelated or only weakly related to HP at Time 2. Thus, in line with past research (Carbonneau et al., 2008; Lavigne et al., 2012), these findings suggest that passion predicts changes in outcomes, whereas outcomes do not predict changes in passion.

GENERAL DISCUSSION

Past research has revealed the existence of a paradox where both positive and negative effects have been observed on the physical health and well-being of those helping others through the promotion of a given cause. The major purpose of the present research was to attempt to resolve this paradox. Based on the dualistic model of passion (DMP; Vallerand et al., 2003; see Vallerand, 2008, 2010, in press), we tested the hypothesis that the negative physical health and subjective well-being outcomes derive from an OP for the cause, whereas the positive effects take origins in HP. Overall, the results from three studies provided support for this major hypothesis. Specifically, these findings revealed that HP was positively linked to satisfaction with one's involvement in the cause in all three studies, which was not the case for OP. Further, HP was found to predict increases in satisfaction over time (Study 3). In addition, OP was positively associated with negative health indices such as physical injuries occurring during passionate activity engagement (Studies 1 and 2) as well as physical symptoms (Study 3). HP was unrelated to these variables. Further analyses revealed that these negative effects of OP were mediated by self-neglect (Studies 2 and 3). Results also uncovered that HP predicted an increase in general health from

pre- to postmission (Study 3), whereas OP led to a decrease in one's general health condition (Study 3) and to an increase of physical symptoms following a mission (Study 3). Finally, results showed that OP positively predicted PTSD and that such negative effects were mediated through rumination. HP was not related to any of the negative outcomes. These findings lead to a number of implications.

On Passion and the Consequences of Helping by Promoting a Cause

The DMP (Vallerand et al., 2003) conceives of passion as a type of high involvement in an activity that one loves and is deemed highly important. Furthermore, two types of passion are proposed (i.e., HP and OP) that are characterized by different qualities of involvement. The first type of high involvement derives from OP, where individuals experience an uncontrollable urge to partake in the activity that they love and thus feel controlled by the passionate activity. This type of passionate engagement leads to problematic outcomes, such as rigid persistence, emotional conflicts, and health issues (Vallerand, 2008, 2010, in press). Conversely, the second type of high involvement is drawn from HP, where people feel free to engage in the passionate activity and feel in control. This type of passion conveys positive outcomes, such as flexible persistence, emotional stability, and better health (Vallerand, 2008, 2010, in press). Thus, the consequences that derive from this duality in the quality of high involvement according to one's type of passion raise an important question: Does being involved in a cause facilitate or hinder health and subjective well-being?

Providing help to achieve a cause entails high involvement, especially when leaving for several months to engage in a mission overseas, and can lead to a number of positive as well as negative consequences. Past research on the role of passion for a cause (Gousse-Lessard et al., 2013; Rip et al., 2012) has shown that the two types of passion lead to different types of interpersonal behaviors (adaptive vs. extreme) according to their type of passion (HP vs. OP, respectively). However, such research did not look at the intrapersonal effects of having a passion for a given cause. The present results from three studies showed that HP for a cause promotes, while OP either hinders or is unrelated to, physical health and subjective well-being. In addition, in line with past research (Carbonneau et al., 2008; Lavigne et al., 2012), the findings of Study 3 suggest a direction of effects with passion predicting outcomes and not the other way around. Thus, the DMP sheds light on the important role of passion in the personal consequences of being involved in a cause. Of major importance, the present research provides some resolution to the previously mentioned paradox: One's involvement in a cause may lead to either adaptive or maladaptive intrapersonal outcomes, depending on whether one's passion for a cause is harmonious or obsessive in nature.

An interesting avenue of future research would be to investigate how performance on a mission is influenced by the type of passion underlying one's high involvement in a cause. The performance of the participants in the present research was not assessed, and we do not know whether the quality of their performance varied as a function of passion. Although past research has shown that the two types of passion can both contribute positively to high performance (e.g., Bonneville-Roussy, Vallerand, & Bouffard, 2013; Vallerand et al., 2007, 2008), such research took place in areas such as sports, music, and the arts and not as pertains to a humanitarian cause. It is possible, for instance, that when abroad on a mission, the task to be done is so demanding that one must put one's needs aside and has to engage in self-neglect in order to achieve the highest levels of performance. Such performance would then come with a personal cost and would likely come from OP. At the same time, it is also possible that one needs to protect oneself in order to provide the highest level of help possible throughout a mission, as it is difficult to provide help on a prolonged basis (i.e., several missions) if one is personally suffering. Future research is thus needed to shed light on this issue.

On Passion for a Cause and Physical Health

Being actively engaged in a cause can be quite demanding. For instance, going on a humanitarian mission abroad includes leaving close ones and other important projects behind to live under difficult conditions where pressure and stress can be very high. Thus, some people come back from their mission with significant health problems. The results from the present research are important because they show that being involved in a mission overseas for several months does not invariably lead to health problems. Once again, it depends on one's passion for the cause. As mentioned previously, the present results showed that HP was unrelated to physical injuries associated with one's involvement in a cause and to physical symptoms. Rather, HP led to an increase in general health after returning from a mission (Study 3). Unfortunately, this was not the case for OP. In fact, OP for a cause led to physical injuries related to one's involvement in a cause, as well as to an increase in physical symptoms and to a decrease in general health following a mission.

These findings provide support for the DMP (Vallerand et al., 2003). According to this model, OP leads to a rigid persistence in the activity. In fact, if individuals with an OP have to stop engaging in the passionate activity, even for a short period of time, they will have a hard time letting go. Thus, people with an OP can neglect their biological needs, putting themselves at risk for developing health issues. On the other hand, the flexibility and the mindfulness that HP entails generally facilitate letting go and attending to one's physical needs, thereby protecting one's health. The present findings are in line with previous research on passion that has shown that OP can undermine one's health, as exemplified by an increase in chronic injuries in dancers (Rip et al., 2006), susceptibility

to injuries in runners (Stephan et al., 2009), and physical symptoms in individuals highly involved in computer games (Lafrenière et al., 2009; Przybylski, Weinstein, Ryan, & Rigby, 2009). However, HP has been found to be unrelated to these negative health indices in all studies. Thus, the present findings underscore the fact that such negative health effects due to OP are not limited to personal leisure activities but also take place in activities typically aimed at helping others, such as international missions.

Although past research has suggested that such negative effects of OP may be due to self-neglect, such as engaging in risky behavior (e.g., Vallerand et al., 2003, Study 3) or ignoring the pain from an injury (e.g., Rip et al., 2006), the mediating role of self-neglect in the OP-health relationship had never been empirically tested. The results of the present research provided support for the hypothesized sequence. Specifically, self-neglect was found to mediate the effects of OP on both physical injuries (Study 2) and physical symptoms (Study 3). Thus, OP represents a risk factor for one's health, and self-neglect is one of the processes through which such effects take place. It should be recalled that past research has shown that OP for a political or environmental cause (Gousse-Lessard et al., 2013; Rip et al., 2012) was also found to lead people to engage in the neglect of other people in the forms of violent and extreme behavior in attempting to reach their cause. Similarly, it appears that OP may also facilitate engagement in self-neglect forms of behavior to reach the cause. Thus, to the extent that one's cause is supremely important (as it is for passionate people), having an OP is likely to lead one to engage in both personal and interpersonal forms of neglect to reach the cause. Future research is needed in order to test this hypothesis within the confines of the same cause.

It should be reiterated that negative effects were not found to take place for HP. In fact, while it was unrelated to negative health indices such as physical symptoms and injuries, HP was positively related to a positive health index and even predicted an increase in health from before to after a mission abroad (Study 3). Future research is needed in order to identify the nature of the processes through which HP for a cause leads to such positive health outcomes. One possible mechanism may have to do with mindfulness. The DMP has proposed that HP is conducive to mindfulness (Vallerand, 2008, 2010, in press). However, only one study has examined mindfulness in relation to passion (Verner-Filion, Lafrenière, & Vallerand, 2012). Mindfulness entails an awareness of the present moment, as well as a receptive, open, and nonjudgmental state of mind (Brown, Ryan, & Creswell, 2007). Mindfulness has been found to lead to many positive outcomes, such as better coping strategies and an adaptive stress response (Weinstein, Brown, & Ryan, 2009). Results from Verner-Filion et al. (2012) revealed that HP and OP were positively and negatively related to mindfulness, respectively. Additional research is needed in order to replicate these findings with individuals engaged in a cause and to extend these results by testing mindfulness as a

mediator of the relationship between passion and physical health.

On Passion for a Cause and Subjective Well-Being

The present research yielded some important findings regarding psychological outcomes. First, results from all three studies revealed that HP was positively associated with being satisfied with one's involvement in the given cause. In fact, using a longitudinal design, the results of Study 3 revealed that HP predicted an increase in satisfaction from pre- to postmission. Of additional importance, satisfaction with one's involvement in the cause was not found to predict HP. These findings suggest that HP may cause one's feelings of satisfaction. Overall, these findings are in line with several studies that have found a positive relationship between HP and satisfaction with activity engagement (Vallerand, 2008, 2010, in press), including some studies that have shown that experimentally inducing HP in participants leads to higher levels of satisfaction than a control group (e.g., Bélanger et al., 2013; Lafrenière et al., 2013). In line with past research, OP was not found to positively contribute to satisfaction.

A second important implication of the present research for subjective well-being pertains to the relationship between passion and PTSD. As mentioned previously, missions abroad can be highly demanding and stressful, and, thus, some volunteers return home with physical and psychological health problems. In particular, those who provide help in conflict zones are at greater risk of returning with PTSD. The passion-PTSD relationship was tested for the first time in Study 3. In line with the DMP (Vallerand et al., 2003) and past research on passion and rumination (Carpentier et al., 2012; Ratelle et al., 2004; Vallerand et al., 2003, Study 4), it was posited that OP for a given cause should lead volunteers to experience rumination because they have a hard time letting go of the cause. Rumination about the cause can bring to mind negative and/or stressful episodes experienced during the mission that, in turn, can lead to PTSD (Birrer & Michael, 2011; Ehrling et al., 2008; Michael et al., 2007; Nolen-Hoeksema & Morrow, 1991). Results from Study 3 provided support for the proposed sequence and showed that OP positively predicted rumination about the cause before departure, and such rumination predicted PTSD upon return home. HP did not lead to rumination and PTSD. Thus, not all people who come back from a mission will experience PTSD; only those who have an OP for their cause will do so.

Future research is needed in order to replicate the present findings regarding the relationship between passion, rumination, and PTSD. Different types of missions, including combat missions, might be used to lead to a better understanding of the cognitive functioning associated with OP that is conducive to PTSD. In addition, new research should investigate the nature of the psychological processes triggered by HP that protect against PTSD.

LIMITATIONS

A number of limitations need to be addressed when interpreting the present findings. First, because of the correlational nature of all three studies, definitive conclusions about causality cannot be inferred. Therefore, it is impossible to determine the directionality of causality with respect to the proposed models. Future research using experimental designs where passion is induced should be employed to replicate and confirm the proposed models (see Bélanger et al., 2013; Lafrenière et al., 2013). Second, all variables were reported by the participants themselves. Thus, it is important that future research replicates the present findings while using more objective measures or observer reports of psychological and physical outcomes during the humanitarian missions. Finally, only limited types of causes were studied in the present research. Future research should focus on a more diversified set of causes to better ascertain the generalizability of the present findings.

In sum, the present research provides a resolution of the paradox regarding the inconsistent positive or negative intrapersonal outcomes experienced following helping others within the purview of promoting a given cause. Based on the dualistic model of passion (Vallerand et al., 2003), the present findings revealed that the quality of one's involvement in the cause moderates such effects. Specifically, whereas HP facilitates physical health and subjective well-being, OP can be detrimental to both. Future research on passion for a cause along the present lines would therefore appear promising.

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