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The impact of passion for exercising on the perception of well-being during periods of social isolation

O impacto da paixão pelo exercício na percepção de bem-estar durante períodos de isolamento social

Evandro Morais Peixoto[1], Carolina Rosa Campos[2], Karina da Silva Oliveira[3], Bartira Pereira Palma[4], Bruno Bonfá-Araujo[5], Geovana Mellisa Castrezana Anacleto[6]

[1] Universidade São Francisco, Curso de Psicologia, Pós-Graduação em Psicologia. Campinas, SP, Brasil. Correspondece to: E. M. PEIXOTO. E-mail: <epeixoto_6@hotmail.com>
[2] Universidade Federal do Triângulo Mineiro, Curso de Psicologia e Laboratório de Avaliação Psicológica, Departamento de Psicologia. Uberaba, MG, Brasil.
[3] Universidade São Francisco, Curso de Psicologia, Pós-Graduação em Psicologia. Campinas, SP, Brasil.
[4] Universidade Estadual de Campinas, Faculdade de Educação Física, Laboratório de Estudos em Pedagogia do Esporte. Limeira, SP, Brasil.
[5] University of Western Ontario, Department of Psychology, Faculty of Social Sciences. Ontario, Canadá.
[6] Universidade de Mogi das Cruzes, Curso de Educação Física, Departamento de Educação Física. Mogi das Cruzes, SP, Brasil.

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Abstract

Objective
Of this study was to, based on a theoretical model, verify the associations between the variables passion, affect, satisfaction with life, and distress, the predictive power of the different types of passion on the perception of positive and negative affect, and the effect of this relation against the evaluation of psychological well-being and distress.

Method
Three hundred and fifty-nine participants aged between 18 and 70 years (M = 36.60; SD = 11.90) answered a sociodemographic questionnaire, and the Passion, Positive and Negative Affect Schedule, Satisfaction with Life, and the Kessler Psychological Distress Scales. Data were analyzed using correlation coefficients and structural equation modeling.

Results
The adequacy of the proposed model was estimated with satisfactory fit indices and positive relations between Harmonious Passion, Positive Affect, and Satisfaction with Life.

Conclusion
The results suggest that Harmonious Passion contributes to coping with suffering and negative experiences, such as those experienced in the pandemic moment.

Keywords: Coronavirus infections; Mental health; Motor activity; Psychology, sports.

Resumo

Objetivo

Verificar as associações entre as variáveis paixão, afetos, satisfação com a vida e distresse, o poder preditivo dos diferentes tipos de paixão sobre a percepção de afetos positivos e negativos, e o efeito desta relação frente a avaliação de bem-estar psicológico e distresse, partindo de um modelo teórico.

Método

Participaram 359 sujeitos, com idades entre 18 e 70 anos (M = 36,60; DP = 11,90) que responderam ao questionário sociodemográfico, Escalas de Paixão, Afetos Positivos e Negativos, Satisfação com a Vida e Distresse Psicológico de Kessler. Os dados foram analisados por meio de coeficientes de correlação e modelagem de equações estruturais.

Resultados

A adequação do modelo proposto foi verificada com índices ajustes satisfatórios e relações positivas entre Paixão Harmoniosa, Afetos Positivos e Satisfação com a Vida.

Conclusão

Os resultados sugerem que a Paixão Harmoniosa contribui para o enfrentamento do sofrimento e de experiências negativas, como os experimentados no momento pandêmico.

Palavras-chave: *Infecções por coronavírus; Saúde mental; Atividade motora; Psicologia do esporte.*

The pandemic resulting from the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus, which causes the Coronavirus Disease 2019 (COVID-19), presented different challenges to current society. Several actions have and continue to be taken, from fighting the disease (pursuing vaccine production and treatment protocols), to implementing social isolation (as an effective prevention measure; Farias, 2020). Throughout 2020, these coping actions were implemented in an attempt to contain the spread of the virus; however, losses were noted throughout these coping strategies (Barreto et al., 2020). Notably, those related to social consequences, economic and educational losses, decreased practice of activities and exercises, among other possible impacts (Porsse et al., 2020).

Given this scenario, several efforts have been made to understand the impacts on the mental health of individuals at this point of the pandemic, especially those resulting from the process of social isolation (Duarte et al., 2020; Schmidt et al., 2020). Thus, different studies have pointed to an increase in Psychological Distress (PD) conditions at the said moment of isolation (Conversano et al., 2020; Di Giuseppe et al., 2020; Marazziti et al., 2020). It is important to reflect that, in the literature, PD has been understood as an emotionally unpleasant and stressful state, arising from internal and external stressful conditions (Varela et al., 2017), generating mental health impacts such as low self-esteem, increased anxiety, agitation, and sadness, decreased perception of quality of life, which could act as a predisposing factor to the emergence of more serious psychopathologies (Conversano et al., 2020; Duarte et al., 2020; Varela et al., 2017).

Because of the presence of PD during the COVID-19 pandemic, it is noted that studies have pointed to the need for the expansion of personal and social strategies that favor and strengthen coping with suffering and the impact of negative experiences (Conversano et al., 2020; Duarte et al., 2020). This unveils important challenges to sport and exercise sciences, such as finding ways to promote the practice of physical exercise, even in contexts of social isolation, given the contribution of these activities to maintaining physical and mental health (Brooks et al., 2020; Tremblay et al., 2017).

In this sense, considering the multifactorial challenges posed by the pandemic and the potential contributions from the interface between Sport Psychology (which is part of the sport sciences) and Positive Psychology (which is linked to the potentially healthy aspects of individuals), it can be stated that the development of research that brings empirical knowledge about psychological

constructs associated with protective processes and that are relevant to maintain ongoing physical activities, even in these challenging moments, become fundamental and relevant.

Physical Exercise and Psychological Constructs as Protective Factors in Facing the COVID-19 Pandemic

It is known that physical exercise contributes to human development, being considered a protective factor. For this reason, facing this new pandemic scenario, it is necessary to investigate the role of psychological constructs that are associated with the engagement and continuity of practicing sports and physical activities in contexts of social isolation. This is because, even when such activities are carried out at home, the practice of exercise is associated with the development of autonomy, favoring self-care actions, being understood, therefore, as protective factors for physical and mental health aspects (Souza Filho & Tritany, 2020).

Among these psychological constructs, associated with engagement and maintenance of the practice, one can mention the passion for exercise, satisfaction with life, and positive and negative affect. Although the concept of passion may be associated with a notion related to loss of rationality and lack of emotional control, in Positive Psychology, the phenomenon of passion is linked to positive behavioral phenomena, which allow the engagement and inclination to some kind of practice, such as sports and physical exercise (Vallerand et al., 2003; Vallerand & Miquelon, 2007). In this sense, the passion for sports is related to favoring persistence and contributes to commitment and motivation of its practice. According to these authors, passion can be understood from a dualistic model, in which there is a harmonious passion related to the autonomous internalization of practicing sports, contributing to the satisfaction with the activity, maintaining of its practice throughout life and, therefore, quality of life, without the perception of compulsion and control for its realization. In addition, the construct also carries the definition of Obsessive Passion (OP), which involves the absence of control over the practice and, consequently, a case of dependence on the activity that can reduce the individual's quality of life (Cid & Louro, 2010; Vallerand, 2015).

Another relevant component regarding quality of life and Subjective Well-Being (SWB) refers to the affective dimension, which encompasses positive and negative affect. Characterized by the intensity and frequency with which people experience emotions (Lyubomirsky et al., 2005), Positive Affect (PA) is related to enthusiasm, pleasure, and confidence, while Negative Affect (NA) can be observed by the manifestation of displeasure, also relating to negative moods such as anger, guilt, and fear (Watson et al., 1988). Thus, the structure of the affective dimension (PA and NA) represents opposite and relatively independent ends of the same dimension and should be understood as distinct but complementary (Diener et al., 2018, Fredrickson & Joiner, 2018; Soares et al., 2020).

Considering the relation between the practice of sports, passion, and affect, it is worth considering that, as pointed out by Miranda-Neto et al. (2012), the practice of sports favors the experience of pleasurable sensations, which can be enhanced by harmonious passion, given its association with motivation and positive involvement with the activity (Vallerand & Miquelon, 2007). Such relation allows the increase of the occurrence of positive affect, and consequently, favors the positive evaluation of the activity, which potentializes maintaining the practice for extended periods (Lyubomirsky et al., 2005; Xavier et al., 2020). Thus, given these relationships, it is possible to hypothesize that practicing sports that favor positive experiences is associated with harmonious passion, positive affect, and psychological well-being, functioning as protective factors of mental health. This hypothesis assumes value, especially in the current pandemic context, marked by huge challenges to the maintenance of physical and mental health.

It is worth considering that this relation will potentially have an impact on the overall understanding that the individual has about his/her history, that is, about his/her SWB and Satisfaction With Life (SWL), because these constructs reflect on the different areas of an individual's life, contributing to the subjective assessment of his/her way of living (Diener et al., 2009; Muratori et al., 2015). Satisfaction with life is characterized as a complex process in which the individual's evaluation, desires, and feelings are observed as a function of the perception of their psychological and physical abilities and those factors related to the environment (Chelladurai & Riemer, 1997). In this sense, in the process of evaluating their SWL, it is important for the individual to consider their dispositional and environmental characteristics. According to Reppold et al. (2019), it is possible to observe that some individuals, depending on this evaluation, value pleasant events with greater intensity, while others value negative events. Thus, understanding the levels of SWL can indicate the potential for one maintaining or quitting the practice of physical activity, depending on the evaluations that the individual makes and their perceptions of affect arising from the practice. Although it is possible to identify studies that have investigated passion, affect, and satisfaction with life in an isolated manner as protective factors in dealing with challenging situations arising from the COVID-19 pandemic (Conversano et al., 2020; Di Giuseppe et al., 2020; Marazziti et al., 2020), studies that propose to investigate the relation between this set of variables are still scarce. This gap is even more evident when considering the investigation of the impacts of the types of passion for exercise on affect and mental health indicators. Thus, the objective of this study is to verify the associations between the variables and the predictive power of the distinct types of passion on the perception of positive and negative affect, and the effect of this relationship against the evaluation of psychological well-being and the presence or absence of psychological distress.

Therefore, this research is based on the hypotheses of an integrative theoretical model that justifies the relation between these variables, in which harmonious passion is positively and strongly related to the perception of positive affect while exercising, favoring higher levels of satisfaction with life. On the other hand, it is hypothesized that obsessive passion would be positively and strongly related to the perception of negative affect, in such a way that could favor higher levels of emotional suffering, i.e., psychological distress.

Method

Participants

The sample was composed of 359 participants, aged 18 to 70 years (M = 36.60; SD = 11.90). Most were female (67.4%), single (51.0%), from the southeastern region (70.2%) of the country. Among the respondents, nine had some kind of disability (2.5% [physical disability - 1.4%; visual impairment - 0.8%; and hearing impairment - 0.3%]). As for the types of exercises practiced, most reported walking (n = 70) and weight-training (n = 51).

Instruments

Sociodemographic questionnaire – Developed for this research to collect descriptive sociodemographic information such as sex, age, education; as well as isolation data (number of days isolated); and of the participants' home and commuting practice of physical activities (time spent performing physical activities and characteristics of the practice).

Passion Scale (PS, Vallerand et al., 2003) – A seven-point Likert-type scale to assess the dimensions of obsessive and harmonious passion, assessed through twelve items, six for each dimension. Scale response options range from "strongly disagree" to "strongly agree". Regarding the psychometric quality of the instrument, studies have indicated adequacy of the internal structure of the PS to the theoretical proposal of two factors and good accuracy rates (Peixoto et al., 2019).

Positive and Negative Affect Schedule (PANAS, Giacomoni & Hutz, 1997) – The PANAS aims to measure both types of affect based on 40 adjectives that characterize traits, 20 positive and 20 negative. The scale is answered in a Likert format (1 = Not at all to 5 = Extremely). Examples of responses are "2. Kind", "10. Upset", and "31. Nervous". Regarding the psychometric quality of the instrument, studies have indicated adequacy of the two-factor structure and good indices of accuracy.

Satisfaction With Life Scale (SWLS, Zanon et al., 2014) – This instrument aims to check satisfaction with life from a general point of view. The scale is composed of five items on a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). An example of an item is: "In most ways my life is close to my ideal" (Item 1). The factorial structure of the SWLS is unidimensional.

10-item Kessler Psychological Distress Scale (K10; Kessler et al., 2002; Peixoto et al., 2021) – The K10 aims to measure participants' psychological distress by means of ten items on a Likert scale (1 = None of the time, 5 = All of the time). In addition to the overall distress score, it is possible to compute two factors, being anxiety, composed of four items, and depression, composed of six items. Some examples of items are "1. During the last 30 days, about how often did you feel tired out for no good reason?" and "10. During the last 30 days, about how often did you feel worthless?". Regarding the psychometric quality of the instrument, studies have indicated the adequacy of the one-factor structure with adequate reliability index.

Procedures

After research approval by the Research Ethics Committee (CAAE: 31959220.6.0000.5514, Universiade São Franciso), the instruments were made available on the online platform Google Forms®, and the access link was disclosed in the social networks of the researchers and the research group. The sample consisted of participants who agreed to the information contained in the Informed Consent Form (ICF), declaring themselves to be over 18 years of age. After accepting the terms of the ICF, the subjects answered the instruments in the order described above, with a scheduled time of up to 15 minutes for completion. Data were collected from May 29, 2020, to June 8, 2020.

Data Analysis

After data collection, the results were moved to a spreadsheet and descriptive and inferential statistics were analyzed. Initially, statistics of central tendency and dispersion (mean and standard deviation) of the variables were estimated. Variable association was verified by Pearson correlation, using as indicators of statistical significance levels of $p < 0.05$ and interpretation of correlation magnitudes between -0.09 to 0.09 as null; from 0.10 to 0.29, small; 0.30 to 0.49, medium; and 0.50 to 1.0, large. Jamovi software 1.2.5 was used to perform these analyses.

Structural Equation Modeling (SEM) was used to evaluate the model of the relation between the variables and the predictive power of the passion indicators on the affect experienced during exercise and its effects on life satisfaction and psychological distress. Among the main contributions of this procedure is the possibility of evaluating the association between a set of latent variables estimated from the scores of the items that make up the respective measurement instruments, as well as the estimation of measurement errors associated with the parameters of the models (Kline, 2011).

Thus, the significant contributions of the independent latent variables as explanations of the dependent latent variables and the total proportion explained by the independent variables R^2 were verified. The fit quality of the tested models was verified by means of the fit indices χ^2, *gl*, χ^2/gl, CFI, TLI, and RMSEA and by the significance of the estimated effects. The significance level adopted was $p < 0.05$ and the software used to perform the analysis was MPlus 7.3.

Results

Initially, the variables' mean and standard deviation results were observed, as well as each instrument's Cronbach's alpha and McDonald's omega, with the lowest coefficient identified as α and ω = 0.84 for Harmonious Passion (HP) and the highest with α = 0.93 and ω = 0.94 for Negative Affect (NA). Importantly, the other coefficients were within the range presented.

Next, due to the analysis of Pearson's correlation coefficients, significant and positive correlations were found between HP and Positive Affect (PA), with low magnitude. Similarly, the relationship between HP and Satisfaction with Life proved to be significant, positive, and with small magnitude. On the other hand, when the relations between HP, NA, and Distress were taken, we noticed significant, negative, and small magnitude relationships. It is worth noting that PA showed positive correlations and moderate magnitudes with the life satisfaction measure, as well as negative correlations and moderate magnitudes with NA and Distress measures. Further details of these data can be found in Table 1.

Table 1
Descriptive analyses, reliability, and correlation between variables evaluated in this study

Variables	*M*	±	α	ω	HP	OP	PA	NA	SWL	Distress
HP	4.95	1.69	0.92	0.92	–					
OP	2.48	1.41	0.84	0.85	0.45*	–				
PA	2.92	0.76	0.92	0.93	0.29*	0.14*	–			
NA	2.40	0.79	0.93	0.94	-0.11	0.05	-0.20*	–		
SWL	5.02	1.22	0.88	0.88	0.16*	-0.02	0.39*	-0.30*	–	
Distress	2.35	0.89	0.92	0.92	-0.22*	0.103	-0.36*	0.69*	-0.47*	–

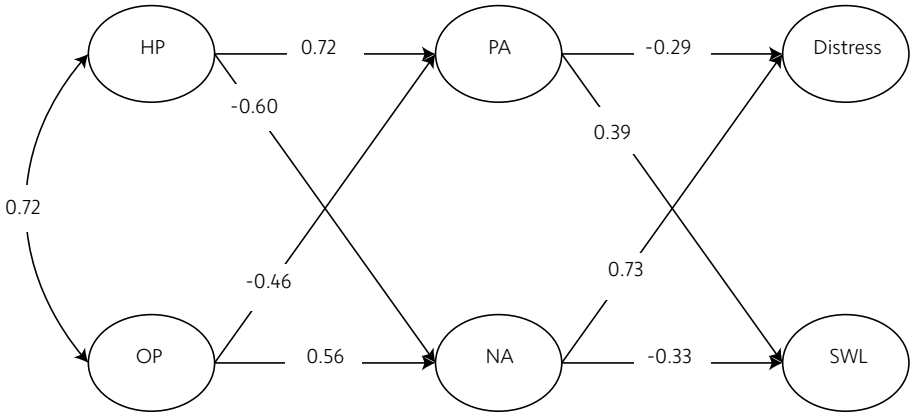
Note: *$p < 0.001$. HP: Harmonious Passion; M: Mean; NA: Negative Affect; OP: Obsessive Passion; PA: Positive Affect; SWL: Satisfaction with life.

After these actions, the hypothesized models were evaluated using structural equation modeling. The results indicated a fit of the data to the model, with adequate fit indices: $\chi^2 = 2173.406$, $gl = 1.025$, $p < 0.01$) CFI = 0.945, TLI = 0.943, RMSEA = 0.056 [90% CI 0.053-0.059]. The model with standardized estimates is shown in Figure 1.

Initially it was found the adequacy of the items for the composition of the respective instruments and, consequently, for the estimation of the latent variables employed in the model stands out. Regarding the PS, the factor loadings varied between 0.80 and 0.89 for the Harmonious Passion factor, and between 0.42 and 0.87 for the Obsessive Passion factor. For the PANAS, these values ranged between 0.46 and 0.89 on the Positive Affect factor and between 0.57 and 0.87 on the Negative Affect factor. In the SWLS, these values ranged between 0.77 and 0.90; and for K10, between 0.66 and 0.87. This suggests the adequacy of the measurement models employed in this research.

Regarding the structural model, it is seen in Figure 1 that Harmonious Passion positively predicts ($\beta = 0.72$, $p < 0.01$) the experience of Positive Affect and negatively predicts ($\beta = -0.60$, $p < 0.01$) the experience of Negative Affect during exercise in the period of social isolation. Additionally, Obsessive Passion positively predicts ($\beta = 0.56$, $p < 0.01$) Negative Affect and negatively predicts ($\beta = -0.46$, $p < 0.01$) the experience of Positive Affect during exercise.

Figure 1
Theoretically tested model of passion, affect, distress, and satisfaction with life



Note: HP: Harmonious Passion; NA: Negative Affect; OP: Obsessive Passion; PA: Positive Affect; SWL: Satisfaction with life.

Also in relation to the model, the experience of Positive Affect while exercising was positively associated (β = 0.39, $p < 0.01$) with Satisfaction with Life and negatively associated (β = -0.29, $p < 0.01$) with Psychological Distress, while the experience of Negative Affect was negatively associated (β = -0.33, $p < 0.01$) with Satisfaction with Life and positively (β = 0.73, $p < 0.01$) with Psychological Distress. Finally, it is emphasized that the model was able to explain 25% of the variability in Positive Affect factor scores, 19% of the variance in Negative Affect, 31% of the variance in Satisfaction with Life, and 70% of the variability in Psychological Distress.

Discussion

In view of the challenges arising from the COVID-19 pandemic, several efforts were made for developing coping strategies to favor individuals' adaptation and mental health conditions (Barreto et al., 2020; Porsse et al., 2020). In this sense, the present study was based on the theoretical hypothesis that the type of involvement with the act of exercising (HP or OP) could exert influence on the affect (positive or negative) experienced by individuals and, consequently, this relation could influence the levels of satisfaction with life and psychological distress. For this, it was sought to evaluate the integrative theoretical model shown in Figure 1.

In general, the results showed the adequacy of the model indicating the effects of the types of passion for exercise (harmonious and obsessive) on the experience of affect during physical exercise, which, in turn, influence the practitioners' levels of satisfaction with life and psychological distress. These results suggest the importance of harmonious engagement with exercise during the period of social isolation, as when based on obsessive passion, this practice can present itself as another source of internal conflicts (Vallerand et al., 2003; Vallerand, 2015).

The results from the correlation analyses indicated a positive, significant association between HP and PA and SWL, as well as negative associations between HP and NA and psychological distress. Additionally, a low magnitude positive correlation was observed between OP and PA. Such results are consistent with those observed in studies that have investigated the relation between these variables in sports (Vallerand et al., 2006; Vallerand et al., 2008; Verner-Filion & Vallerand, 2018), and corroborate the conception that the potential of HP for an activity can promote psychological well-being and protect against malaise, given the positive affect that this type of engagement

with the activity can elicit (Vallerand, 2012). Finally, PA was positively associated with SWL, and negatively associated with psychological distress, while NA was negatively associated with SWL and positively associated with psychological distress; suggesting that elevated levels of positive affect favor building long-term personal resources and optimizing health outcomes. Conversely, an elevated level of negative affect experienced during sports would be associated with restricted levels of psychological well-being (Fredrickson & Joiner, 2018).

These associations are even more compelling from the results of structural equation modeling in which the hypothetical model was tested, indicating a strong predictive power of HP for exercising on the positive and negative affect experienced during these practices. Such results allow inferring that practitioners who present Harmonious Passion for exercising, experience, more commonly, positive affect during the practice when compared to those who present an obsessive involvement with it (Vallerand, 2012). Additionally, they corroborate the theoretical hypotheses that underpin the model tested in the present research. As demonstrated by the literature, this occurs because carrying out an HP-based activity is aligned with the person's interests and values, integrating into their identity from a self-determined perspective. On the other hand, the activity guided by the OP, even when aligned with personal interests, is associated with negative results, to the extent that the person does not present control over internal and external pressures for its undertaking (Cid & Louro, 2010; Vallerand, 2015).

Knowing the determinants of positive emotions during physical exercise is an important challenge to Sport and Exercise Psychology, especially in its interface with Positive Psychology, since such determinants enhance experiences and adaptive outcomes (Miranda Neto et al., 2012; Vallerand et al., 2020). In this sense, regarding the practice of exercises, one can highlight the higher probability of maintaining these activities for extended periods, as well as obtaining positive physiological and psychological results, since affect can assume an important role in this context. Specifically, as PA represents the degree to which the individual experiences a pleasant involvement with the physical exercise or environment, while NA represents a subjective suffering and an unpleasant involvement with the activity or environment, they may contribute to the maintenance or abandonment of the activity (Cox et al., 2020; Fredrickson & Joiner, 2018).

Additionally, the results observed in the model corroborate the literature regarding the Dualistic Model of Passion, suggesting that HP leads to the experience of positive emotions both during and after the activity, and in turn OP promotes negative affect during and after engaging in the activity (Cid & Louro, 2010; Vallerand, 2015). In this sense, it is worth considering the effects of affect experienced during exercise on individuals' life satisfaction and psychological distress, since elevated levels of positive affect positively predicted levels of well-being, while negative affect negatively predicted subjective well-being, leading to lower levels of life satisfaction and higher levels of psychological distress. Similar results were observed by St-Louis et al. (2020) who verified the positive and negative effects of harmonious and obsessive passion for leisure activities, respectively, on emotional regulation strategies (adaptive and non-adaptive) that in turn contributed (in the case of adaptive strategies) to perceived well-being.

It is important to reflect that, according to Chelladruai and Riemer (1997) and Reppold et al. (2019), satisfaction with life is a complex appraisal process in which the individual weighs personal aspects (such as desires, feelings, and accomplishments) and contextual aspects (focused on the environment). Such evaluations impact different areas of this individual's life, favoring, or not, healthier choices for their lifestyle (Diener et al., 2009; Muratori et al., 2015).

On the other spectrum, as pointed out by Reppold et al. (2019), there are individuals who may experience negative experiences with greater intensity and may be more vulnerable to psychological distress. Thus, such individuals may present depressive and anxious experiences, difficulties in managing and controlling emotions and behaviors, impairing, in this sense, the adherence and maintenance of practicing sports (Decat et al., 2009; Perales et al., 2014).

This scenario is even more relevant under the reflection of social isolation as a means of facing the COVID-19 pandemic, in which the practice of physical activities has been valued and encouraged, as well as its benefits to physical and mental health (Amatriain-Fernández et al., 2020; Ravalli & Musumeci, 2020). In this sense, an international study conducted with participants from 18 countries observed an increase in adherence to physical exercise during the period of social isolation, often justified by the monotony resulting from the reduction of daily activities and of social origin (Brand et al., 2020). However, it was also observed that the behavioral change of adhering to exercise did not always immediately result in improvements in subjective well-being, suggesting that these benefits should be experienced through a long-term practice. Such findings corroborate the results of the present research, since people who were harmoniously enthusiastic with physical exercise and, therefore, who already presented its integration into their personalities, were those who experienced higher levels of positive affect during the activity, as well as better levels of psychological well-being.

Also in this sense, the efforts and development of national policies, as well as research in health behavior and exercise psychology on the importance of promoting exercise and predicting changes in exercise behavior, may contribute to a potential future need for social isolation and during post-pandemic moments, encouraging the maintenance of sports practices as relevant for the healthy development of individuals. This is because, according to the results, people who present HP for exercising can remain active even after social and environmental changes that require adaptations to its practice, such as the closing of sports centers, gyms, sports squares, and public spaces voted for this purpose.

It is worth highlighting that, although the promotion of physical exercise is related to the maintenance of physical and mental health, the significance attributed by the individual to this practice may differentiate the affect experienced during its performance, as well as their perception of subjective well-being. In this sense, the findings related to harmonious passion in sports practice are inferred, which favor and contribute in a way that strengthens the coping of suffering and negative experiences in periods such as those faced during the COVID-19 pandemic (Conversano et al., 2020; Duarte et al., 2020).

Final Considerations

The present study sought to contribute to the understanding that certain psychological constructs can serve as protective and developmental factors of subjective well-being, such as passion for the practice of sports for coping with the COVID-19 pandemic. In agreement with theoretical expectations, the results suggest that HP contributes to coping with suffering and negative experiences, such as those experienced during the pandemic, promoting higher rates of satisfaction with life. Likewise, it was confirmed that obsessive passion would be positively and strongly related to the perception of negative affect, so that such a relationship would favor higher levels of emotional suffering, that is, of distress. Future investigations are necessary with the inclusion of new variables that may serve as protectors, as well as variables related to the sport practice itself,

such as the time devoted to practice and engagement and types of practice, to promote greater understanding within the theme.

Finally, the limitations of this research are highlighted, such as the fact that it used a transversal design to analyze the association of the variables passion, affect, satisfaction with life, and psychological distress, which prevents the inference of causality between them. In addition, it is important to note that the data were collected using self-report measures, which, although presenting evidence of validity and accuracy, may be influenced by response biases such as social desirability, acquiescence, among others. For future studies, we suggest the use of methods for controlling response biases, as well as the use of longitudinal research protocols and experimental methods to increase understanding of how these variables interact over time and enable inferences of causality between them.

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Contributors

Conceptualization: E. M. PEIXOTO. Data curation: E. M. PEIXOTO, C. R. CAMPOS, K. S. OLIVEIRA, B. B. ARAÚJO and G. M. C. ANACLETO. Methodology: E. M. PEIXOTO, C. R. CAMPOS, K. S. OLIVEIRA, B. B. B. P. PALMA and G. M. C. ARAÚJO.Formal Analysis: E. M. PEIXOTO, C. R. CAMPOS, K. S. OLIVEIRA, B. B. ARAÚJO and G. M. C. ANACLETO. Writing–review and editing: E. M. PEIXOTO, C. R. CAMPOS, K. S. OLIVEIRA, B. B. ARAÚJO, B. P. PALMA and G. M. C. ANACLETO.