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See online Appendix for additional materials.

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Construct validity of two measures of self-forgiveness in Portugal: a study of self-forgiveness, psychological symptoms, and well-being

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ABSTRACT

Several studies have suggested that self-forgiveness promotes psychological well-being. The state self-forgiveness scale (SSFS) and the differentiated self-forgiveness process scale (DSFPS) are two self-report questionnaires that assess self-forgiveness in psychotherapy, personal change, and health. The present study aims to examine the psychometric properties of the SSFS and the DSFPS in a Portuguese sample, highlighting reliability and validity properties for scores on both scales. We examine the relationships among self-forgiveness, self-criticism, psychological well-being, and global psychopathological symptoms. The two scales were completed in a random nonclinical sample of 475 University students. The psychological well-being scale was used to explore the relation between self-forgiveness and well-being. Our findings show evidence of a good estimated internal consistency for scores on both scales - SSFS and DSFPS. Self-forgiveness is related to higher indexes of positive feelings (e.g., self-compassion, self-esteem) such as positive behaviors and beliefs about the self. Thus, self-criticism (e.g., hated self) tends to decrease while self-forgiveness feelings and actions, as well as positive feelings of the self (self-compassion; self-love) tends to increase. In clinical practice these are positive indicators, which can lead to personal improvement, as well as positive affect and lower symptomatology (e.g., symptoms of depression).

Key words: Self-forgiveness; psychometric properties; psychological well-being; self-criticism.

Introduction

Self-forgiveness has been found to reduce mental health symptoms and to promote psychological well-being (Woodyatt, Worthington, Wenzel, & Griffin, 2017) in a variety of cultures. Perhaps the most widely accepted theory explaining why is the role of self-forgiveness in stress and coping theory. Offenses are stressors that are appraised and reacted to physiologically, emotionally, cognitively, motivationally, and behaviorally-with many stress reactions. People cope with stress reactions in many

ways, but forgiving oneself if one sees oneself as perpetrator, is a way that people can mitigate stress reactions, change their appraisals, and also affect the meaning of the stressors. The benefits of forgiving oneself are well documented (for many reviews, see Toussaint, Worthington, & Williams, 2015).

Numerous studies have provided evidence for the beneficial aspects of facilitating self-forgiveness in overcoming emotional damage related to inflicting interpersonal offenses on others, experiencing negative relational experiences, or disappointing oneself (Greenberg, Warwar, & Malcolm, 2008; Wade, Hoyt, Kidwell, & Worthington, 2014; Wohl, DeShea, & Wahkinney, 2008; Woodyatt & Wenzel, 2013; Wohl & McLaughlin, 2014; Woodyatt *et al.*, 2017). Yet, it is still necessary to deepen our comprehension of this concept in non-clinical samples as also its role on personal development. To achieve this endeavor, we focus on the translation and adaptation of these instruments in a new language. We also aim to study the relation between self-forgiveness and both mental health symptoms and other well-being indicators in a sample of Portuguese population.

Emotional damage is understood here as the experience of having lingering, bad feelings deriving from an interpersonal situation that is perceived as offensive, unjust and/or causing personal suffering (Greenberg *et al.*, 2008). Frequently, when a person becomes aware of committing such an interpersonal offense on another person, the offender can experience negative emotions like guilt, shame, regret, and remorse. This emotional evaluation of the wrongdoing can arouse a higher level of maladaptive internal processes, such as high self-condemnation or intense self-criticism, which are coupled with already present negative emotions.

Fisher and Exline (2006) see this recognition of one's own culpability and perhaps even of maladaptive emotions like shame as a first step toward self-forgiveness, which can repair and reestablish a relationship and lead to an improvement in an offender's well-being.

Recently, research on self-forgiveness has accelerated (for reviews or research, see the edited book by Woodyatt *et al.*, 2017). However, even now, self-forgiveness is likely still considered the 'stepchild of forgiveness research' (Hall & Fincham, 2005; for a meta-analysis, see Davis *et al.*, 2015). One reason for the relative infrequency of research on self-forgiveness is its confinement to the United States and Australia and investigation using the English language.

Individualistic, self-oriented cultures - like those in the USA, Australia, New Zealand, England, and some of Northern Europe (*e.g.*, Amsterdam, Germany) and Scandinavia - might be particularly vulnerable to people who struggle with self-condemnation, because they construe the wrongs they have done and their disappointments in terms of the injury to the self. Thus, they might be particularly in need of knowledge about self-forgiveness, which has led to heightened research interest in the topic.

However, recent research has recast the study of self-forgiveness more relationally, which opens up the study of self-forgiveness to cultures more oriented to relationships - like collectivistic cultures in the Far East, Africa, many countries in South America, and cultures in Southern Europe like Spain, Italy, and Portugal. For example, Wenzel, Woodyatt, Okimoto, & Worthington (2020) have conceptualized self-condemnation as one part of interpersonal interactions around offenses and wrongdoing.

Namely, offenders and victims have many options for pushing the relationship toward restoration or further division. For example, the offender might feel justified in having inflicted an injustice on the victim. Or the offender might be motivated by guilt and shame to self-justify his or her own acts by blaming the victim, thus easing the offender's shame and guilt to the degree that self-justification can do so. Either way would push the relationship toward dissolution. On the other hand, the offender often experiences remorse and regret over wrongs done to the victim. The offender might then attempt relationally reparative actions, like accepting responsibility for the wrong or at least for the offender's part in the wrong, apologizing, expressing empathy for the victim, offering to make reparations, promising not to offend again, and asking for forgiveness. The degree to which the offender can feel and act with appropriate vulnerability can affect the responses of the victim.

The victim also has many choices that might precede or follow the offender's expressions of contrition or self-justification. Similarly, how the victim acts can push the relationship apart or back together. If the victim takes a harsh retributive justice stance and maintains it regardless of what the offender does, the relationship is likely in for conflict and the offender is not likely to forgive the self. On the other hand, if the victim is forgiving, expresses empathy and forgiveness, and aims the relationship at reconciliation, the relationship has a good likelihood of being repaired, and the offender is more likely to forgive the self.

In the *Handbook of Forgiveness*, 2nd ed. (Worthington & Wade, 2020), numerous authors expressed more interest in seeing research in the future on the interpersonal context of offenses rather than what has been the case in the first 20 years of intensive research on forgiveness - a focus on the internal forgiveness processes of the victim.

These shifts in the field of forgiveness studies suggests that new research is welcome from countries that already value and contextualize behavior within relationships. A key step to advance further research on self-forgiveness is to develop robust psychometric measures to assess this construct that can be used in more collectivistic cultures.

Hence, our efforts here focus on the adaptation and assessment of self-forgiveness measures to a Portuguese sample of young adults. We will also look at how self-forgiveness relates with other complementary variables (such as self-criticism, psychological well-being, depression, and global psychopathological symptoms). The invest-

ment in developing such measures is a cornerstone to provide further evidences regarding the contribution of this variable to psychological well-being and for the facilitation of personal development and the resolution of interpersonal problems.

Self-forgiveness - a brief construct review

A psychological perspective on self-forgiveness conceives this as an internal process (Woodyatt *et al.*, 2017), usually implying several steps: i) a person recognizes oneself as an offender, whose actions were hurtful, damaging or wrong (*i.e.*, against some form of moral order) toward another person (victim); ii) this leads the offender to experience negative emotions - such as shame, guilt, regret, or anger - toward him or herself, and, afterwards; iii) in case of an increase of self-forgiveness, the offender experiences a reduction of these negative feelings and an increase of more positive feelings toward him or herself, such as self-acceptance, self-compassion or self-understanding (Hall & Fincham, 2008; Woodyatt & Wenzel, 2013; Worthington, 2013; Worthington & Langberg, 2012).

Different authors have highlighted specific aspects of self-forgiveness. Woodyatt and Wenzel (2013) propose self-forgiveness as, ‘The process in which the perpetrator of the offense recognizes the victim’s own guilt and worth, experiencing emotions resulting from the interpersonal offense, and providing attitudes and behaviors that lead to the attempt to understand the offense and to the attempt to correct (...) the moral self’ (p. 231).

For Fisher and Exline (2006), self-forgiveness occurs only when the person in the role of the offender can forgive oneself. Self-forgiveness differs from forgiveness from the point of view of the offender: that is, while forgiveness of the other is an interpersonal process, self-forgiveness is a self-directed process, emphasizing the intrapersonal dimension of this construct (Toussaint & Webb, 2005; Webb, Robinson, & Brower, 2012). Other authors suggest that self-forgiveness is not only about the absence of positive affirmations concerning one’s own moral values (Wenzel, Woodyatt, & Hedrick, 2012; Wohl & McLauhlin, 2014), but also involves the need to use different strategies to achieve a reduction of self-criticism, guilt and shame, in order to enhance positive emotions such as self-compassion and self-acceptance (Woodyatt *et al.*, 2017). To Wohl and colleagues (2008), self-forgiveness is understood as the liberation of a negative experience, like the abandonment of negative thoughts, feelings and behaviors related to the self (*e.g.*, guilt; shame), thus enhancing the arrival of self-acceptance, self-generosity and love for oneself (see also Woodyatt *et al.*, 2017).

A key aspect of self-condemnation is self-criticism, which is implied in two of aspects of self-forgiveness: first, in the awareness of the offense committed and the recognition that one’s actions were hurtful, damaging or wrong; second, it is implied, through its decrease, when one begins to transform negative emotions into more positive

emotions towards the self (Woodyatt *et al.*, 2017). Whelton (2000) highlights that self-criticism is often harmful to the individual. The person can experience high levels of self-condemnation. That results in experiences of sadness and shame and, consequently, in the inability to control one’s maladaptive internal state. That lack of control results in depression. High self-criticism tends to maintain maladaptive shame, resulting in emotional distress, negative affect, low self-esteem, and avoidance when one recalls the offense committed (Gilbert & Andrews, 1998; Gilbert, Clarke, Hempel, Miles, & Irons, 2004). Also, they suggest that maladaptive shame tends to contribute to: i) problems of depression, anxiety, and low self-esteem, when the emotion of shame is internalized; or ii) problems of hostility and aggression when the emotion of shame is externalized. The authors also suggest that self-forgiveness is related to dysphoria about the perceived wrongdoing. Dysphoria results in an emotional state of inferiority that consequently blocks self-forgiveness. This hinders a person’s predisposition to self-forgive (Gilbert & Andrews, 1998; Gilbert *et al.*, 2004).

Self-forgiveness and well-being

Previous studies have highlighted the relation between self-forgiveness, mental health, and well-being (*e.g.*, Cornish & Wade, 2015; Wilson, Milosevic, Carroll, Hart, & Hibbard, 2008). More specifically, pervasive, or chronic negative emotions are linked with rumination and negative health outcomes (Gilbert & Andrews, 1998; Whelton, 2000; Wohl, Pychyl, & Bennett, 2010). Yet, self-forgiveness can reduce rumination and pervasive negative emotions (Wohl *et al.*, 2010) and allows the individual to reintegrate a positive self-image, restored without condoning (Thompson *et al.*, 2005).

A meta-analysis on self-forgiveness by Davis and colleagues (2015) showed evidence of a connection between self-forgiveness, positive mental health, and well-being (average $r = -0.45$). They found a negative correlation with depression and anxiety (*e.g.*, depression average $r = -0.48$). Thus, higher values of self-forgiveness, positive mental health, and well-being were correlated with lower levels of depression. Liao and Wei (2015) also showed evidence of a link between self-forgiveness and positive mental health indicators in a sample of undergraduate students. Higher levels of self-forgiveness were related to lower levels of perceived stress and symptoms of depression. Self-forgiveness is also related to better psychological well-being (Cornish & Wade, 2015; Davis *et al.*, 2015; Liao & Wei, 2015; Wohl *et al.*, 2010), highlighting the importance of the present research and encouraging other researchers to continue investigating these constructs.

The present study

Previous studies have been carried out internationally for developing measures for self-forgiveness (*e.g.*, Re-

coder, Gámiz, Worthington, Davis, & Fernández-Capo, 2019). From these, we focus on the state self-forgiveness scale (SSFS) (Wohl *et al.*, 2008) and on the differentiated self-forgiveness process scale (DSFPS) (Woodyatt & Wenzel, 2013). These two measures have been used the longest to assess states of self-forgiveness.

The SSFS was the first self-report measure to evaluate self-forgiveness. Specifically, it is a scale that purports to assess self-forgiveness feelings, beliefs, and actions regarding the offense the person committed. The scale is subdivided into two dimensions, namely: i) self-forgiveness feelings and actions (SFFA) (*e.g.*, ‘Considering what I did wrong, I feel rejection of myself’; ‘Considering what I did wrong, I punish myself’); and ii) self-forgiveness beliefs (SFB) (*e.g.*, ‘Considering what I did wrong, I believe that I am worthy of love’). Both subscales had adequate psychometric properties. The alphas ranged from 0.74 to 0.89 (Wohl *et al.*, 2008).

The DSFPS is a self-report measure to assess self-forgiveness related to an interpersonal offense (*e.g.*, infidelity; betrayal of trust). The DSFPS classifies the degree of severity of the offense through three subscales, namely: i) pseudo self-forgiveness (Pseudo SF) (*e.g.*, ‘I feel that the other person had what he deserved’); ii) self-punitive (SP) (*e.g.*, ‘I deserve to suffer for what I have done’); and, iii) genuine self-forgiveness (GSF) (*e.g.*, ‘Since I’ve made my mistake, I’ve been trying to change’). All subscales showed good psychometric properties. Alphas ranging from 0.81 to 0.85 (Woodyatt & Wenzel, 2013).

In Portugal, none of such scales have been translated. Nor have their psychometric properties been studied. Therefore, our main goal is to culturally adapt and to study psychometric properties of the SSFS and the DSFPS for the Portuguese population in a sample of University students given that the scales are complementary. That is, the two scales assess different dimensions of self-forgiveness. Therefore, in this study, we computed estimated reliability of the scores, and we sought to examine whether evidence exists supporting the predictive construct validity of the scales. To provide evidence regarding validity, we computed the relationships between self-forgiveness and other constructs. Because the scales should ostensibly assess the same construct, they should be correlated highly with each other, and the subscales should also be intercorrelated. Evidence of predictive construct validity of the scores would be positive correlations with constructs that self-forgiveness should strongly predict, namely self-criticism and self-reassurance. Self-forgiveness should theoretically be less strongly correlated with psychological well-being; and symptoms of depression and psychopathological symptoms (both negative correlations). Finally, discriminant construct validity should be shown by a zero correlation with social desirability. This progression of decreasing strength of associations (*e.g.*, the other measure of self-forgiveness → self-criticism and self-reassurance → psychological well-being and symp-

toms → social desirability) illustrates a nomological network of associations.

Methods

Participants

Our participants were N=475 university students (230 women, 48.4%; 245 men, 51.6%), with ages between 18 and 55 years old. The mean age of the total sample is 21.98 ($DP=5.78$). There were no statistically significant differences between men and women in terms of age, $t(473)=-0.620$; $P=0.535$.

Measures

State self-forgiveness scale

The SSFS (Wohl *et al.*, 2008) is a self-report measure that evaluates self-forgiveness. It consists of 17 items, with response options from 1 to 6, where 1=*Strongly Disagree* to 6 = *Strongly Agree*. The SSFS integrates two subscales, namely the i) SFFA (*e.g.*, self-forgiveness feelings - ‘Considering what I did wrong, I feel acceptance of myself’; *e.g.*, self-forgiveness actions - ‘Considering what I did wrong, I punish myself’); and ii) SFB (*e.g.*, ‘Considering what I did wrong, I believe I am decent’). This measure also contains a final, single response item (‘Considering what I did wrong, I forgive myself...’), with response options from 0=‘*Not at all*’ to 3=‘*Completely*’ Wohl and colleagues (2008) reported Cronbach’s alpha for both subscales: for SFFA, $\alpha=0.74$; for SFB, $\alpha=0.89$. In the present study, the SFFA had $\alpha=0.77$, confidence interval (CI) 99% [0.72-0.81], $\Omega_{\text{categorical}}=0.91$ and the SFB had $\alpha=0.84$, CI 99% [0.81-0.86], $\Omega_{\text{categorical}}=0.93$.

Differentiated self-forgiveness process scale

The differentiated self-forgiveness process scale (DSFPS) (Woodyatt & Wenzel, 2013) is a self-report instrument that evaluates self-forgiveness, initiated by a question to define the type of offense committed (*e.g.*, infidelity; betrayal of trust) and then assessing the degree of severity of that offense through three subscales, namely: Pseudo SF (*e.g.*, ‘I think the other person was guilty of what I did’); SP (*e.g.*, ‘What I did is unforgivable’); and GSF (*e.g.*, ‘I’m trying to learn with my mistake’). The subscales comprised a total of 20 items, rated on seven-point response options from 1=*Strongly Disagree* and 7=*Strongly Agree*. The original results obtained by Woodyatt and Wenzel (2013) report Cronbach’s alphas as Pseudo SF ($\alpha=0.81$); SP ($\alpha=0.85$); GSF ($\alpha=0.85$). In the present study, the DSFPS had Cronbach’s alphas for the three weakly related subscales - Pseudo SF ($\alpha=0.64$, CI 99% [0.56-0.70], $\Omega_{\text{categorical}}=0.70$); SP ($\alpha=0.80$, CI 99% [0.77-0.84], $\Omega_{\text{categorical}}=0.75$); GSF ($\alpha=0.82$, CI 99% [0.79-0.85], $\Omega_{\text{categorical}}=0.79$).

Forms of self-criticism and reassuring scale

The forms of self-criticism and reassuring scale (FSCRS) (Gilbert *et al.*, 2004; Portuguese version by Castilho & Gouveia, 2011) is a self-report measure that evaluates self-criticism and self-reassurance in situations of failure. It is composed of 22 items constituting three subscales (*e.g.*, 'I cannot accept failures without feeling inadequate'; 'I have a feeling of disgust for myself'). The subscales are inadequate self (IS), self-reassurance (SR), and hated self (HS). Responses options are from 0=*Not at all like me* to 4=*Extremely like me*). Gilbert and colleagues (2004) reported Cronbach's alphas for all subscales - IS ($\alpha=0.90$); SR ($\alpha=0.86$); HS ($\alpha=0.86$). Castilho and Gouveia (2011) also had similarly strong Cronbach alphas - IS ($\alpha=0.89$); SR ($\alpha=0.87$); HS ($\alpha=0.62$). In the present study, Cronbach's alpha for the FSCRS was $\alpha=0.70$, CI 99% [0.65-.75], $\Omega_{\text{categorical}}=0.90$). Cronbach's alphas for the subscales were, for the IS $\alpha=0.87$, CI 99% [0.84-0.89], $\Omega_{\text{categorical}}=0.82$ and for the SR, $\alpha=0.87$, CI 99% [0.85-0.89], $\Omega_{\text{categorical}}=0.82$. Cronbach's alpha for the subscale HS was low, ($\alpha=0.52$, CI 99% [0.42-.61], $\Omega_{\text{categorical}}=0.90$).

Psychological well-being scale

The psychological well-being scale (PWBS) (Ryff, 1989; Portuguese version by Novo, Duarte-Silva, & Peralta, 1997) is a self-report measure to evaluate psychological well-being. This brief version contains 18 items (*e.g.*, 'I gave up trying to make big improvements or changes in my life a long time ago'; 'I like most aspects of my personality'), distributed across the following six dimensions: Self-Acceptance; Personal Growth; Purpose in Life; Positive Relations; Environmental Mastery, and, Autonomy. Response options were from 1=*Strongly Disagree* to 6=*Strongly Agree*. Ryff (1989) reported Cronbach's alpha ranging from 0.83 (Self-Acceptance) to 0.68 (Personal Growth). The results obtained by Novo and colleagues (1997) showed evidences of a low estimated internal consistency for all subscales - Self-Acceptance ($\alpha=0.52$), Personal Growth ($\alpha=0.40$), Purpose in Life ($\alpha=0.33$), Positive Relations ($\alpha=0.56$), Environmental Mastery ($\alpha=0.49$), Autonomy ($\alpha=0.37$). In the present study, the PWBS (total) had a strong Cronbach's alpha ($\alpha=0.84$, CI 99% [0.82-0.87], $\Omega_{\text{categorical}}=0.96$), as well as for the subscales Self-Acceptance ($\alpha=0.66$, CI 99% [0.94-0.96], $\Omega_{\text{categorical}}=0.86$) and Purpose in Life ($\alpha=0.62$, CI 99% [0.96-0.97], $\Omega_{\text{categorical}}=0.76$). The subscales Personal Growth, Positive Relations, Environmental Mastery and Autonomy showed evidence of a low estimated internal consistency: Personal Growth ($\alpha=0.52$, CI 99% [0.94-0.96], $\Omega_{\text{categorical}}=0.80$); Positive Relations ($\alpha=0.50$, CI 99% [0.96-0.97], $\Omega_{\text{categorical}}=0.77$); Environmental Mastery ($\alpha=0.54$, CI 99% [0.96-0.97], $\Omega_{\text{categorical}}=0.86$); Autonomy ($\alpha=0.40$, CI 99% [0.96-0.97], $\Omega_{\text{categorical}}=0.83$).

Personal health questionnaire

The personal health questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001; Portuguese version by Ferreira *et al.*, 2019) is a self-report measure that evaluates the severity of symptoms of depression according to the criteria of the Diagnostic and Statistical Manual of Mental Disorders. This measure has 9 items (*e.g.*, 'I feel little interest or pleasure in doing things'; 'I feel that I don't like myself or feel disappointed about myself or others') that use a four-point response options from 0=*Not at all* to 3=*Nearly every day*. Kroenke and colleagues (2001) found strong Cronbach's alphas from $\alpha=0.86$ to 0.89. The Portuguese version by Ferreira and colleagues (2019) also had alphas from $\alpha=0.61$ to 0.77. In the present study, the PHQ-9 has $\alpha=0.86$, CI 95% [0.83-0.88], $\Omega_{\text{categorical}}=0.93$.

Brief symptom inventory

The brief symptom inventory (BSI) (Derogatis & Spencer, 1982; Portuguese version by Canavarro, 1995) is a self-report measure that evaluates psychopathological symptoms and contains 9 dimensions: Somatization; Obsession-compulsion; Interpersonal Sensitivity; Depression; Anxiety; Hostility; Phobic Anxiety; Paranoid Ideation; Psychoticism. The scale contains 53 items and uses response options from 0=*Not at all* to 4=*Extremely*. Derogatis and Spencer (1982) found alpha to be $\alpha=0.95$, and Canavarro (1995) found alpha to be $\alpha=0.93$ for the Portuguese version of this scale. In this present study, the BSI had $\alpha=0.98$, CI 95% [0.97-0.98], $\Omega_{\text{categorical}}=0.99$.

Marlowe-Crowne social desirability scale

The Marlowe-Crowne social desirability scale (MCSDS) (Ballard, 1992; Portuguese version by Pechorro, Vieira, Poiaras, & Marôco, 2012) is a self-report instrument that assesses the tendency of the person to respond in a socially accepted way. It uses 13 items that are responded to by either *True* or *False* (*e.g.*, 'I already pretended to be sick to get out of a situation'; 'I'm always nice, even if people are rude to me'). Ballard (1992) found $\alpha=0.70$ and Pechorro and colleagues (2012) $\alpha=0.60$ to 0.61 for the Portuguese version of this scale. In the present study, the MCSDS had $\alpha=0.64$, CI 95% [0.58-0.70], $\Omega_{\text{categorical}}=0.99$.

Procedures

The main researcher contacted the authors of all measures to obtain authorizations for their use. The present study was approved by the Ethical Committee of the University. The data collection for the present study was carried out across several phases. After obtaining the authors' consent, the SSFS and the DSFPS were translated into Portuguese according to the guidelines of Beaton, Bombardier, Guillemin, and Ferraz (2000). The process of translation went through different steps. First, the trans-

lation was carried out by two independent researchers who speak both languages. Second, a synthesis of the first translation was carried out by the main researcher. Third, the back-translation and the revision were performed by a specialized translator.

After translation of the two self-forgiveness instruments, all instruments were given to a random sample of student's participants. The researcher (first author) explained the main goals of the study and provided information regarding confidentiality (to guarantee the anonymity of each participant during reporting of results). An email contact was provided to the participants to provide additional information on this study or referral to psychological help after participation, if they wished such. After this, each participant signed an informed consent form and provided their sociodemographic data. These procedures occurred in a university context.

Data analysis

Confirmatory factor analysis (CFA) was conducted, on the SSFS, to examine whether the original two-factor structure proposed by Wohl and colleagues (2008) presented an adequate fit to the studied sample. A CFA was also conducted on the DSFPS, to examine whether the three-factor structure proposed by Woodyatt and Wenzel (2013) existed in the Portuguese sample.

The goodness-of-fit (GOF) was assessed using the Chi-square (c^2/df). A ratio of 3 or under is considered to indicate an adequate model. The fit of the model was considered good for the comparative fit index (CFI) and the Tucker-Lewis index (TLI) values above 0.90 (Tucker & Lewis, 1973), standardized root mean square residual (SRMR) for values below 0.08 (Kline, 2016), and root mean square error of approximation (RMSEA) for values below 0.08 (Byrne, 2010; McDonald & Ho, 2002).

All statistical analyses were performed with R (R Core Team, 2018) and RStudio (RStudio Team, 2018). To assess multivariate normality, we used Mardia's multivariate kurtosis (Mardia, 1970), and it was calculated using the psych package (Revelle, 2018). The lavaan package (Rosseel, 2012) was used to compute the CFA using the weighted least squares means and variances (WLSMV) estimation method (Muthén, 1983). The adjustment of the model was made from the modification indexes (higher than 11; $P < 0.001$) based on theoretical considerations.

Pearson's correlation coefficients were used to examine evidence of convergent and discriminant construct validity. Higher correlations values between the measures analyzed were regarded to a greater indicator of convergent construct validity. Lower correlation values indicated a greater evidence of discriminant construct validity (Fayer, 2007). As a level of statistical significance, a modified Bonferroni's corrected alpha of 0.001 was used.

Results

Missing data diagnostics revealed that no data were missing. Omega point estimates were satisfactory (Nunnally & Bernstein, 1994). Descriptive statistics (means and standard deviations), bivariate associations, and estimates of internal consistency for the study variables are displayed in Table 1.

Table 1. State self-forgiveness scale and differentiated self-forgiveness process scale factor weights (λ), Cronbach's alpha (α) and composite reliability.

	Factor/items	λ	α	CR	
SSFS	SFFA		0.78	0.75	
	Item 1 (SFF 1)	0.29			
	Item 2 (SFF 2)	0.55			
	Item 3 (SFF 3)	0.67			
	Item 4 (SFF 4)	0.51			
	Item 1 (SFA 1)	0.78			
	Item 2 (SFA 2)	0.39			
	Item 3 (SFA 3)	0.52			
	Item 4 (SFA 4)	0.57			
	SFB			0.83	0.84
	Item 1 (SFB 1)	0.77			
	Item 2 (SFB 2)	0.43			
	Item 3 (SFB 3)	0.44			
	Item 4 (SFB 4)	0.66			
	Item 5 (SFB 5)	0.47			
	Item 6 (SFB 6)	0.53			
Item 7 (SFB 7)	0.45				
Item 8 (SFB 8)	0.68				
Item 9 (SFB 9)	0.71				
DSFPS	Pseudo SF		0.63	0.70	
	Item 8 (Pseudo SF 8)	0.54			
	Item 9 (Pseudo SF 9)	0.65			
	Item 10 (Pseudo SF 10)	0.62			
	Item 11 (Pseudo SF 11)	0.20			
	Item 12 (Pseudo SF 12)	0.62			
	Item 13 (Pseudo SF 13)	0.41			
	SP			0.80	0.80
	Item 1 (SP 1)	0.53			
	Item 2 (SP 2)	0.59			
	Item 3 (SP 3)	0.60			
	Item 4 (SP 4)	0.59			
	Item 5 (SP 5)	0.57			
	Item 6 (SP 6)	0.71			
Item 7 (SP 7)	0.63				
GSF			0.82	0.82	
Item 14 (GSF 14)	0.50				
Item 15 (GSF 15)	0.53				
Item 16 (GSF 16)	0.81				
Item 17 (GSF 17)	0.68				
Item 18 (GSF 18)	0.44				
Item 19 (GSF 19)	0.55				
Item 20 (GSF 20)	0.69				

CR, composite reliability; SSFS, state self-forgiveness process scale; SFFA, self-forgiveness feelings and actions; SFF, self-forgiveness feelings; SFB, self-forgiveness beliefs; DSFPS, differentiated self-forgiveness process scale; Pseudo SF, pseudo self-forgiveness; SP, self-punitive; GSF, genuine self-forgiveness. * $P < 0.001$.

Content validity-confirmatory factor analysis

We performed a CFA on both scales. Regarding the CFA of the SSFS, we analyzed two factors gathering the items founded in the original version. The structural model fit the data reasonably well, $\chi^2(102)=390.53$, $P<0.001$, $RMSEA=0.077$ (90% $CI=[0.69, 0.85]$, $P<0.001$), $CFI=0.935$, $TLI=0.913$ and $SRMR=0.085$ (Model 1). However, because χ^2/df and the $SRMR$ were both slightly higher than desirable, we examined individual items. Items 1 and 6 of SFFA, as well as items 2, 3, 5 and 7 of SFB were not adequate, because factor loads are lower than .50 (being $\lambda=0.29$, $\lambda=0.39$, $\lambda=0.43$, $\lambda=0.44$, $\lambda=0.47$, $\lambda=0.45$, respectively). We removed those six items, and repeated the CFA. According to this replication, the structural model fit the data better, $\chi^2(43)=115.99$, $P<0.001$, $RMSEA=0.060$ (90% $CI=[0.047, 0.073]$, $P=0.103$), $CFI=0.969$, $TLI=0.960$ and $SRMR=0.073$ (Model 2). We found that composite estimated reliability values exceeded the recommended minimum of 0.60 (Bagozzi & Kimmel, 1995). Also, Cronbach's alphas had values higher than .70 (Field, 2019) (see Table 1).

Concerning the CFA of the DSFPs, we analyzed its three factors from the original version. The structural model did not fit the data adequately, $\chi^2(167)=870.92$, $P<0.001$, $RMSEA=0.094$ (90% $CI=[0.088, 0.101]$, $P<0.001$), $CFI=0.817$, $TLI=0.792$ and $SRMR=0.104$ (Model 1). However, item 11 and 13 of Pseudo SF, as well as item 18 of SP were not adequate; their factor loadings were lower than 0.50 (being $\lambda=0.20$, $\lambda=0.41$, $\lambda=0.44$, respectively). We removed those three items, repeated the CFA, and the structural model fit the data well, $\chi^2(43)=263.84$, $P<0.001$, $RMSEA=0.053$ (90% $CI=[0.045, 0.061]$, $P=0.263$), $CFI=0.950$, $TLI=0.940$ and $SRMR=0.068$ (Model 2). We found that composite reliability values exceeded the recommended minimum of 0.60 (Bagozzi & Kimmel, 1995) and Cronbach's alpha values were higher than 0.70 (Field, 2019) (Table 1).

Construct validity using a brief nomological network of associations

We provided evidence supporting construct validity by evaluating correlations within a nomothetic network of associations. This network examines construct validity by computing correlations of the scores of the two self-forgiveness measures (and their subscales) with scores on measures at varying degrees of theoretical closeness to the construct under consideration.

Construct validity

Thus, using scores on measures with the closest degree of theoretical similarity, the scores were correlated with each other, and using correlations of scores on each self-forgiveness measure with FSCRS. Typically, these should be high.

Predictive convergent construct validity

Evidence of predictive convergent construct validity would be provided by assessing correlations of scores on the self-forgiveness measures with scores on measures that might be expected to be predicted by self-forgiveness. We used two mental health measures as criteria - the PHQ-9, symptoms of depression and the nine subscales of the BSI (Somatization; Obsession-compulsion; Interpersonal Sensitivity; Depression; Anxiety; Hostility; Phobic Anxiety; Paranoid Ideation; and Psychoticism, and for General Symptomology) and a measure of well-being (PWBS). Discriminant validity is the extent that measures of a construct are not related to measures that they theoretically should not be related. We used the MCSDS scale as our measure of discriminant validity. Theoretically, we expected that correlations under: i) construct validity would be reasonably high (~ 0.5 or higher); ii) predictive construct validity would be moderate (~ 0.2 to 0.3) and related negatively to mental health symptoms and positively to well-being; and iii) discriminant construct validity would be low (~ 0.0). All correlations between these variables were statistically significant and occurred in the expected direction, as can be seen in Table 2.

For both SSFS subscales (SFFA and SFB) and DSFPs (e.g., GSF DSFPs), the higher the score on SSFS and DSFPs, the lower are the rates of self-criticism (e.g., IS FSCRS). Also, the higher the score on SSFS subscales (SFFA and SFB) the higher the rates of self-reassurance (e.g., SR FSCRS). The higher is the score on DSFPs Punitive Self (which indicates a reluctance to forgive the self), the lower are the rates of self-reassurance (e.g., SR FSCRS), which is theoretically consistent.

Concerning symptoms of depression (e.g., Depressive Symptoms PHQ-9) and other psychopathological symptoms (e.g., Somatization BSI or Obsession-Compulsion), the higher is the score on SSFS (SFFA and SFB) and the higher are the rates of psychological well-being (e.g., total PWBS). The higher is the score on DSFPs (e.g., Punitive Self - i.e., a non-self-forgiving stance), the lower are the rates of psychological well-being (e.g., total PWBS), which again is theoretically consistent and provides evidence of predictive construct validity.

Regarding the subscales SFFA and SFB, belonging to the SSFS, and the subscales Pseudo SF and GSF, belonging to the DSFPs, the same procedures were carried out. Results are similar: i.e., the higher are the scores for these subscales, the higher are the rates of self-reassurance and psychological well-being, and lower are self-criticism and symptoms of depression (Table 2).

Discriminant construct validity

Low correlations can be seen in Table 2 between social desirability and the subscales: SFFA; SFB; SP; and, GSF.

Table 2. SFFS/DSFPS and PHQ-9, BSI, PWBS, FSCRS, MC-SDS construct, convergent and discriminant validity.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Construct validity (gold standard)																				
1. SFSA SFFS	-																			
2. SFB SFFS	0.527*	-																		
3. SP DSFPS	-0.473*	-0.450*	-																	
4. GSF DSFPS	0.195*	0.099	-0.373*	-																
Convergent predictive construct validity (strong association)5. IS FSCRS-0.448*-0.304*0.426*-0.287* -																				
6. SR FSCRS	0.384*	0.286*	-0.324*	0.059	-0.379*	-														
Convergent predictive construct validity (moderate association)																				
7. Depressive symptoms PHQ-9	-0.280*	-0.195*	0.336*	-0.122*	0.483*	-0.374*	-													
8. Somatization BSI	-0.203*	-0.219*	0.283*	-0.080	0.375*	-0.319*	0.625*	-												
9. Obsession-compulsion BSI	-0.264*	-0.224*	0.293*	-0.111	0.471*	-0.401*	0.682*	0.722*	-											
10. Interpersonal sensibility BSI	-0.322*	-0.262*	0.327*	-0.107	0.532*	-0.462*	0.654*	0.702*	0.769*	-										
11. Depression BSI	-0.300*	-0.206*	0.347*	-0.076	0.513*	-0.457*	0.734*	0.688*	0.794*	0.842*	-									
12. Anxiety BSI	-0.290*	-0.256*	0.319*	-0.115	0.481*	-0.419*	0.702*	0.824*	0.794*	0.804*	0.790*	-								
13. Hostility BSI	-0.243*	-0.223*	0.301*	-0.076	0.439*	-0.290*	0.660*	0.680*	0.738*	0.703*	0.746*	0.780*	-							
14. Phobic anxiety BSI	-0.174*	-0.207*	0.217*	-0.044	0.353*	-0.303*	0.528*	0.736*	0.671*	0.698*	0.653*	0.792*	0.618*	-						
15. Paranoid ideation BSI	-0.222*	-0.204*	0.243*	-0.090	0.440*	-0.268*	0.592*	0.634*	0.691*	0.748*	0.710*	0.671*	0.683*	0.567*	-					
16. Psychoticism BSI	-0.334*	-0.291*	0.355*	-0.111	0.519*	-0.427*	0.704*	0.710*	0.813*	0.837*	0.848*	0.820*	0.759*	0.721*	0.733*	-				
17. Total BSI	-0.300*	-0.265*	0.348*	-106	0.522*	-0.425*	0.760*	0.855*	0.892*	0.893*	0.903*	0.927*	0.852*	0.810*	0.813*	0.916*	-			
18. Total psychological well-being PWBS	0.268*	0.202*	-0.310*	-0.021	-0.440*	0.496*	-0.491*	-0.359*	-0.502*	-0.578*	-0.592*	-0.453*	-0.396*	-0.489*	-0.418*	-0.565*	-0.545*	-		
Discriminant predictive construct validity (zero association)																				
19. Pseudo SF DSFPS	0.080	0.052	0.031	0.075	-0.036	-0.003	0.026	0.042	0.042	-0.004	0.025	0.014	0.093	0.022	0.089	0.025	0.043	-0.035	-	
20. Total MC-SDS	0.111	0.103	-0.173*	0.022	-0.241*	0.105	-0.277*	-0.210*	-0.295*	-0.245*	-0.240*	-0.258*	-0.438*	-0.250*	-0.264*	-0.291*	-0.313*	0.248*	-0.118*	-
M	310.86	410.06	170.44	220.05	10.60	20.60	60.18	0.61	0.94	0.82	0.85	0.79	0.95	0.48	10.03	0.70	0.79	40.55	200.06	60.45
SD	70.09	70.73	70.15	80.09	0.86	0.81	50.02	0.71	0.81	0.89	0.85	0.78	0.85	0.69	0.84	0.78	0.70	0.67	60.12	20.53

In this nomothetic network of associations, theoretically, we expect that correlations under: i) construct validity will be reasonably high (-0.5 or higher); ii) predictive validity will be moderate (-0.2 to 0.3) and related negatively to mental health symptoms and positively to well-being; and iii) discriminant validity will be low (-0.0). SFSA, self-forgiveness feelings and actions; SFFS, state self-forgiveness process scale; SFB, self-forgiveness beliefs; SP, self-punitive; GSF, genuine self-forgiveness; IS, inadequate self; FSCRS, forms of self-criticism and reassuring scale; SR, self-reassurance; PHQ-9, personal health questionnaire; BSI, brief symptom inventory; PWBS, psychological well-being scale; Pseudo SF, pseudo self-forgiveness; DSFPS, differentiated self-forgiveness process scale; MC-SDS, Marlow-Crown social desirability scale; M, mean; SD, standard deviation. * Modified Bonferroni-corrected *p<0.001.

Discussion and Conclusions

The present study had the main goal to study the psychometric properties of the SSFS and the DSFPS, for the Portuguese population in a sample of university students.

Regarding the analysis of the psychometric characteristics of the scales, the results suggest that these measures present good psychometric properties for the evaluation of self-forgiveness in the present sample, as occurred in the original studies for each scale (Wohl *et al.*, 2008; Woodyatt & Wenzel, 2013), as well as with other self-forgiveness measures, previously mentioned (*e.g.*, Enright & Rique, 2004; Recoder *et al.*, 2019; Thompson *et al.*, 2005).

Concerning the CFAs for the two scales, in general the structure of the English-versions of both scales was similar to the Portuguese versions. However, as is often true with translations across cultures, a few items simply did not work as well with the Portuguese sample (Beaton *et al.*, 2000). However, with relatively few items dropped (six for the SSFS and three for the DSFPS) the structure was the same.

At this moment, aspects concerning the discriminant validity of the self-forgiveness construct should also be addressed. Overall, our results suggest that self-forgiveness is not significantly influenced by social desirability, as measured by the MCSDS. More specifically, results indicate a low correlation between social desirability and the SFFA and SFB, and GSF subscales. However, contrary to expectations, social desirability seems to be more related to the SP and Pseudo SF subscales (given the statistically significant correlation found between these variables). A possible explanation for this outcome is related to the need of the offender to block the self-forgiveness process in order to achieve an expected and social response (especially implicated in Pseudo SF), due to maladaptive shame and emotional avoidance, related to the recognition of having committed an offense (Gilbert & Andrews, 1998).

As previously mentioned, self-forgiveness is a cognitive, behavioral, and emotional process carried out by an offender (*i.e.*, someone who recognizes having committed an offense). Self-condemnation entails self-criticism and negative emotions and feelings - like guilt, shame, remorse, and low feelings of self-esteem - that are related to regret subsequent to the offense (Woodyatt *et al.*, 2017). Some people stew in those feelings, which Woodyatt and Wenzel (2013) called self-punitiveness. This typically is not good for mental health. People often alleviate those negative feelings by what Woodyatt and Wenzel (2013) called pseudo-self-forgiveness, which amounts to letting oneself irresponsibly off of the hook. While people feel better, this is detrimental to relationships. Relational health typically requires responsible reparative actions prior to self-forgiveness, which Woodyatt and Wenzel called genuine self-forgiveness. In fact, previous studies have emphasized the importance of receiving interper-

sonal forgiveness from the injured party as a facilitator of self-forgiveness by the offender. When forgiveness from the victim is accompanied by genuine self-forgiveness, this is usually beneficial for the mental health and overall well-being of the person (*e.g.*, Cornish & Wade, 2015; Davis *et al.*, 2015; Liao & Wei, 2015) as well as for the relationship. In the present study, we found systematic support for this theorizing by examining a nomological network of associations with the two self-forgiveness measures. The measures were highly correlated with each other, as expected. They were also highly negatively correlated with symptoms of self-condemnation (*i.e.*, self-criticism) and positively correlated with self-reassurance (Wenzel *et al.*, 2012; Wohl & McLauhlin, 2014). The mental health benefits of self-forgiveness were more distal than were symptoms, and smaller correlations were anticipated, and were found. Overall, these results are congruent with the literature (*e.g.*, Cornish & Wade, 2015; Wilson *et al.*, 2008), providing further empirical evidence for the positive link between self-forgiveness and psychological well-being. In contrast, our results concerning a negative relation between psychological well-being and the punitive self can be understood, following Wohl and colleagues (2010), as related to the negative emotions and actions (such as shame, regret, remorse, and self-punishment) that characterize self-condemnation.

Moreover, the transgressor's predisposition to self-forgive, combined with self-awareness and self-responsibility (*e.g.*, Woodyatt & Wenzel, 2013), may lead to a lower self-criticism (Wohl *et al.* 2008). This process implies emotional change, represented by transforming negative emotions by positive emotions related to the self (Woodyatt *et al.*, 2017; see also, Cornish & Wade, 2015; Greenberg *et al.*, 2008).

The present study provides psychometric justification for using Portuguese versions of the two instruments (with certain items removed) within Portuguese populations. We have provided the Portuguese versions in the Appendix. The Woodyatt and Wenzel (2013) DSFPS is particularly apt for applying to Portuguese culture because it considers not just internal feelings of self-forgiveness, but also relationship-centered responsibilities of people who have offended, which is more likely to yield valid findings in cultures that might be more collectivistic than United States cultures.

Limitations and implications for future research

The SSFS and the DSFPS exhibited good psychometric properties in the current study. Nevertheless, the present research used a specific sample of Portuguese university students, which in consequence, does not allow generalizing the results to other segments of the Portuguese population. We also did the research cross-sectionally, so: i) it was not possible to conduct temporal stability computations; and ii) we could not demonstrate causal predictive validity of the scores. Nonetheless, we

supported other theoretically consistent empirical findings using cross-sectional research (Cornish & Wade, 2015; Davis *et al.*, 2015; Liao & Wei, 2015) and other samples (Wohl *et al.*, 2010). In terms of clinical implications, if the correlational findings can be supported longitudinally, that would provide additional evidence that self-forgiveness is a valid target for psychotherapy, especially when a patient is predisposed to work during psychotherapy toward the goal of self-forgiveness (Woodyatt *et al.*, 2017). However, further studies are required to deepen our knowledge upon the process of self-forgiveness in psychotherapy and in terms of its applicability in clinical and non-clinical populations.

Thus, the present research suggests that it would be useful for future studies to focus on other samples of the general population. In addition, it would be useful to examine clinical samples to expand the present study results.

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