The Polish adaptation and further validation of the Fear of Being Single Scale (FBSS)

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Abstract

The article discusses the results of the validation and psychometric parameters of the Polish-language version of the Fear of Being Single Scale (FBSS), originally developed by Spielmann and colleagues (2013). The study participants included 175 Polish respondents aged 18 to 67 ($M = 27.19$, $SD = 8.63$). The findings confirmed the one-dimensional structure of the Polish FBSS, convergent, discriminant and concurrent validity, reliability of the Polish FBSS, and its high test–retest reliability over a lag of six months. The obtained results make it possible to assess the Polish FBSS as a reliable and valid measure of fear of being single in a Polish non-clinical sample of adults.

Keywords Adult attachment · Fear of being single · Relationship status · Satisfaction with relationship status

Introduction

In 2013, Spielmann and colleagues introduced a new construct termed *fear of being single* defined as an “entailing concern, anxiety, or distress regarding the current or prospective experience of being without a romantic partner.” (Spielmann et al. 2013, p. 1049). Despite the term’s predominant connotations with singlehood, fear of being single may manifest itself both among single as well as partnered individuals (Spielmann et al. 2013). Spielmann and colleagues (2013) elaborated the new construct in reference to other measures of insecurity such as anxious attachment, and emphasized that fear of being single may demonstrate the specificity of the attachment figure desired by individuals, whereas trait anxious attachment may focus on attachment figures beyond merely romantic partners. As evidence of the theoretical distinction between these constructs, in their paper (2013) Spielmann and colleagues provided the results of the exploratory factor analysis demonstrating that fear of being single and anxious attachment loaded onto two separate factors and that there was no cross-loading of items of the Fear of Being Single Scale and the anxious

attachment items. Furthermore, originally Spielmann and colleagues (2013) conceptualized *fear of being single* at the trait level; however, based on the results of a more recent longitudinal study, Spielmann et al. (2016) suggested that fear of being single may also be characterized by some fluctuations similarly to the Big Five personality traits, attachment style prototypes, rejection sensitivity and loneliness.

Alongside the introduction of the new construct *fear of being single*, Spielmann and colleagues (2013), in a series of their seven studies, also developed and validated an instrument for measuring this construct, i.e., the Fear of Being Single Scale (FBSS). In their wide-ranging investigation, the authors examined the convergent validity of the FBSS by determining the zero-order correlations and multiple regressions predicting fear of being single from insecurity-related variables, including anxious attachment and neuroticism, which were found to be positive predictors of fear of being single, whereas avoidant attachment was found to be a nonsignificant predictor of fear of being single (Spielmann et al. 2013). Furthermore, the authors also demonstrated significant negative weak correlations between extraversion, conscientiousness, openness and agreeableness. In turn, the discriminant validity of the FBSS was confirmed by a nonsignificant association between fear of being single and social approach goals, and positive correlations between fear of being single and such measures of interpersonal sensitivity as relationship-contingent self-esteem, rejection sensitivity, hurt feelings proneness, depression, loneliness, and need to belong (Spielmann et al. 2013). At the same time, Spielmann and

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colleagues (2013) have not investigated in their original study the potential mean differences between single and partnered individuals in the domain of fear of being single, despite their statement that fear of being single may manifest itself among single and partnered individuals. Therefore, in the current investigation we formulated research question whether single and partnered individuals would report similar or different levels of fear of being single.

In their series of studies, Spielmann and colleagues (2013) also provided a number of other findings concerning the FBSS. For instance, the authors revealed that individuals characterized by strong fear of being single were more dependent on less satisfying relationships in comparison to individuals of lower fear of being single. Spielmann and colleagues (2013) also demonstrated that fear of being single was a longitudinal predictor of initiation (or lack thereof) of the breakup of relatively less satisfying relationships. Their study also showed that individuals reporting stronger fear of being single were also more willing to settle for low-responsive partners and less attractive partners. In addition, in a cross-sectional study, Spielmann and colleagues (2016) revealed that fear of being single was a predictor of stronger feelings of love and longing for ex-partners, and that individuals who reported higher fear of being single after a breakup and those who in general experienced stronger fear of being single also reported greater longing for ex-partners and were more likely to attempt to reestablish broken relationships.

The Current Study

The primary aims of the current study¹ were to develop and further validate the Polish-language version of the Fear of Being Single Scale (FBSS). The desire to achieve these objectives arose from the empirically evidenced theoretical meaningfulness of fear of being single as “an important, unique predictor of romantic outcomes” (Spielmann et al. 2016, p. 806). In addition, we were encouraged to elaborate the Polish adaptation of the FBSS due to the fact that – to the best of their knowledge – thus far there existed only one non-English version of the FBSS, i.e., the Brazilian adaptation of the FBSS developed by da Fonseca et al. (2017). Being the second investigation aimed at developing and validating a non-English version of the FBSS, the current study would therefore contribute to further assessment of the validity of the FBSS.

In the current investigation we may indicate the following three research issues: 1) the procedure of development of the Polish-language version of the FBSS, 2) the validation of the Polish-language version of the FBSS and 3) the extension of the original results obtained by Spielmann and colleagues

(2013). In regard to the validation of the Polish FBSS, we intended to replicate the original findings obtained by Spielmann and colleagues (2013) in terms of construct, convergent and discriminant validity. In regard to the validation of the Polish FBSS, we intended to replicate the original findings obtained by Spielmann and colleagues (2013) in terms of construct, convergent and discriminant validity. To recall, construct validity, as indicated in literature, “refers to whether the scores of a test or instrument measure the distinct dimension (construct) they are intended to measure”, and it refers to “[...] the collection and application of validity evidence intended to support the interpretation and use of test scores as measures of a particular construct.” (Markus and Lin 2010, p. 229). Furthermore, convergent validity is “established by comparing a new instrument with other related instruments to verify that they measure the same construct.” (Thorkildsen 2010, p. 1594), whereas divergent validity is “established by comparing a new instrument with unrelated instruments to verify that these in fact are distinct.” (Thorkildsen 2010, p. 1594).

As it is defined in the literature, “convergent evidence indicates that test scores are related to other measures of the same construct and to other variables they should relate to as predicted by the construct theory; discriminant evidence indicates that test scores are not unduly related to measures of other constructs.” (Moss 2010, p. 1590).

Therefore, bearing in mind the above-mentioned definitions and following the Spielmann and colleagues’ (2013) study:

- a) we examined the theoretical distinction of fear of being single and anxious attachment by conducting a maximum likelihood exploratory factor analysis with promax rotation;
- b) we determined the factorial structure of the Polish FBSS;
- c) we determined the associations between fear of being single with other psychological constructs as Spielmann and colleagues (2013) did in their study, i.e., with anxious attachment, personality traits, depression, loneliness, and need to belong.

In turn, the extension of the original study by Spielmann and colleagues (2013) included the extension of the convergent and discriminant validity by:

- a) investigation of the associations between fear of being single and close and dependence attachment dimensions which were not investigated in the original study by Spielmann and colleagues (2013);
- b) investigation of the mean level differences between groups distinguished in regard to relationship status, voluntary singlehood and gender, which were not

¹ The data presented in this paper can be found at <https://osf.io/uspmv/>.

investigated in the original study by Spielmann and colleagues (2013). An analysis of the potential mean level differences in regard to relationship status makes it possible to provide the answer to the question whether single and partnered adults experience similar levels of fear of being single. Furthermore, since voluntary vs. involuntary dimension of singlehood may be associated with different outcomes (i.e., agency, romantic loneliness) (Adamczyk 2017; Reynolds et al. 2007), it is worthwhile to compare people who perceive their singlehood as voluntary or involuntary in the domain of fear of being single. The present study also analyzed gender differences in regard to fear of being single, driven by the suggestions that marriage and romantic relationships may operate differently for women and for men (e.g., Wadsworth 2016) and that different meanings of partner status held by women and men may be related to different singlehood consequences for women and men (e.g., Keith 2003). Moreover, in the study aimed at developing the Brazilian version of the FBSS, gender differences were also examined, and the patterns of these differences indicated higher levels of fear of being single among women than among men (da Fonseca et al. 2017);

- c) the assessment of the concurrent validity of the Polish FBSS. In literature, the concurrent validity is indicated to “[...] focus on the extent to which scores on a new measure are related to scores from a criterion measure administered at the same time [...]” (Mislevy and Rupp 2010, p. 209). In the present study, we were interested in the assessment of the concurrent validity of the FBSS by determining the predictive role of fear of being single for the current level of satisfaction with relationship status, which is a very recent theoretical construct understood to mean satisfaction with an individual’s current relationship status (either having a partner or not) (Lehmann et al. 2015). Similarly to fear of being single, this concept can be studied among both single and partnered adults, although single individuals were found to report lower satisfaction with relationship status in comparison to partnered individuals (Adamczyk 2019);
- d) the determination of the test–retest reliability of the Polish FBSS during a six-month interval, since in the original study this reliability was not investigated.

Method

Elaboration of the Polish-Language Version of FBSS

As the first step, three translators independently translated the original FBSS into the Polish language. The six translated

items were also reviewed by the first author and a native English speaker in regard to their content and clarity. The initial version of the Polish FBSS was administered among 10 university students who were asked to indicate any confusing words or sentences. The improvement of the troublesome items finally enabled elaborating the back-translation of FBSS into English by another three experienced translators. Based on this translation procedure, an experimental version of the Polish FBSS was administered among a bilingual group of 23 university students aged 20–23 ($M = 22.91$, $SD = 0.85$). During the classes, the student participants completed the English version of FBSS in the first step, and after a one-month interval they completed the Polish version of FBSS. The performed analyses revealed that the total scale of the original FBSS and the total scale of the Polish FBSS were highly correlated ($r = .79$, $p < .001$, two-tailed). Furthermore, the six items of the original and Polish FBSS demonstrated the following pattern of correlations: item no. 1 ($r = .77$, $p < .001$, two-tailed), item no. 2 ($r = .51$, $p < .05$, two-tailed), item no. 3 ($r = .76$, $p < .01$, two-tailed), item no. 4 ($r = .59$, $p < .01$, two-tailed), item no. 5 ($r = .80$, $p < .001$, two-tailed), and item no. 6 ($r = .56$, $p < .01$, two-tailed). On the basis of these findings, we considered the Polish FBSS as an effective translation of the original scale.

Investigation of the Validity of the Polish FBSS

Participants and Procedure

Originally we have distributed 400 packages of paper-pencil questionnaires. Among 400 distributed questionnaires 246 questionnaires returned (61.50% a response rate), and 71 among them were excluded because of incomplete information. As a result, the final sample utilized in this study consisted of 175 participants aged 18–67 years old ($M = 27.19$, $SD = 8.63$). Women represented 59.40% of the sample ($n = 104$), whereas men represented 40.60% of the sample ($n = 71$). Seventy-one respondents (40.60%) declared being single, whereas 104 respondents (59.40%) declared being partnered at the time of the assessment. The average time of remaining single (in months) was 52.39 ($SD = 84.70$), whereas the average time of being in a relationship (in months) was 89.66 ($SD = 101.00$). With respect to their education status, 90 study participants (51.40%) were university students, 22 participants (12.60%) were secondary school students, and 63 participants (36%) were degree holders. With respect to their place of residence, 44% of participants ($n = 77$) lived in a city with more than 500,000 inhabitants.

The packages of questionnaires were presented to the participants in a counterbalanced order and they were distributed among university students from different faculties of the university who were also asked to encourage their acquaintances and friends, but not their partners, to participate. Participants

were informed in the cover letter about the aim of the study, they were provided with the identity of the principal investigator and her contact information, a description of the type of participation and possibility to withdraw participation and data at any time, an outline of any risks and benefits. Participants were asked to provide their e-mail addresses in case if they would be willing to participate in the second step of the study after six months. Participants were assured that all information provided by them would remain confidential. Participants were asked to provide the informed consent. Participants have not received any compensation for their participation in the wave 1 and wave 2.

Measures

Demographic Questionnaire This questionnaire was designed by the first author to obtain general socio-demographic information such as age, sex, education, place of residence, current relationship status, voluntary vs. involuntary singlehood, and duration of a relationship and duration of singlehood.

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff 1977) (Polish adaptation - Ziarko et al. 2013) was used to assess depressive symptoms. It consists of 20 statements measuring the frequency of depressive symptoms which includes depressive affect (7 test items), absence of well-being (4 items), somatic symptoms (7 items), and interpersonal affect (2 items). Participants indicate the frequency of depressive symptoms in the past week using a four-point scale from 0 (*rarely, or not at all*) to 3 (*most of the time or all the time*). The sum of all items range from 0 to 60 points with higher scores indicating a higher level of depression. In the current study, the internal consistency was found to be $\alpha = .85$.

The Fear of Being Single Scale (FBSS; Spielmann et al. 2013) is a six-item scale designed to measure the fear of being single among single and partnered respondents. Respondents are asked to use scale from 1 (*not at all true*) to 5 (*very true*). In a series of studies, the internal consistency of the original scale ranged from $\alpha = .83$ to $\alpha = .87$ (Spielmann et al. 2013).

The Need to Belong Scale (NTBS; Leary et al. 2013) (Polish adaptation – Adamczyk, 2015, Polish adaptation of the fear of being single scale, need to belong scale, and the belongingness orientation scale, unpublished) is a 10-item scale designed to assess the individual differences in the strength of the desire for acceptance and belonging. Participants respond to items using a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The NTBS is a reliable instrument used successfully in prior studies (author citation; Leary et al. 2013). In the current study, the internal consistency was found to be $\alpha = .81$.

The Revised Adult Attachment Scale (RAAS; Collins 1996) (Polish adaptation – Palus 2010) is an 18-item self-report scale used to assess the three attachment dimensions (Close, Depend, and Anxiety) and the four adult attachment styles (i.e., secure, dismissing, preoccupied, and fearful). Participants rate statements about how they function and feel in a relationship with a partner, someone close, and people in general on a 5-point Likert scale from 1 (*not at all characteristic of me*) to 5 (*very characteristic of me*). The Close dimension refers to the extent to which a person is comfortable with closeness and intimacy. The Depend dimension refers to the extent to which a person feels he/she can depend on others to be available when needed. The Anxiety dimension refers to the extent to which a person is worried about being rejected or unloved. The internal consistency of the original scale is $\alpha = .77$, $\alpha = .78$ and $\alpha = .85$ for Close, Depend, and Anxiety subscales, respectively (Collins 1996). The internal consistency of the Polish RAAS is $\alpha = .75$, $\alpha = .76$ and $\alpha = .86$ for Close, Depend, and Anxiety subscales, respectively (Palus 2010). In the current study, the Cronbach alphas were determined to be $\alpha = .77$, $\alpha = .71$ and $\alpha = .88$ for Close, Depend, and Anxiety subscales, respectively.

The Satisfaction with Relationship Status Scale (ReSta; Lehmann et al. 2015) (Polish adaptation - Adamczyk 2019). ReSta consists of five items rated on a four-point scale: 0 (*not at all*), 1 (*a little*), 2 (*to quite some extent*), 3 (*to a great extent*). Five items are summed up to a total score, with a higher score indicating higher satisfaction with the current relationship status. The original and Polish ReSta were assessed to be reliable and valid scales with confirmed unidimensionality (Adamczyk 2019; Lehmann et al. 2015). In the current sample, the internal consistency was estimated to be $\alpha = .95$.

The Social and Emotional Loneliness Scale for Adults - Short Form (SELSA-S; DiTommaso et al. 2004) (Polish adaptation - Adamczyk and DiTommaso 2014). The SELSA-S is a multi-dimensional measure of loneliness. It consists of 15 items designed to measure emotional (romantic and family) and social loneliness. The items are rated on a 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The SELSA-S's three subscales have high internal reliability, with Cronbach's alphas ranging from .87 to .90, and have been shown to be a valid measure of loneliness (DiTommaso et al. 2004). In the current study, romantic loneliness subscale was used and its consistency was determined to be $\alpha = .80$.

The Ten Item Personality Inventory (TIPI; Gosling et al. 2003) (Polish adaptation - Sorokowska et al. 2014) is a 10-item scale measuring personality traits of the Big Five (i.e., Extraversion Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience). The TIPI items are rated on a 7-

point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach alphas of the original TIPI range from $\alpha = .40$ to $\alpha = .73$, and similar internal consistency was obtained for Polish-language version of TIPI (i.e. from .44 to .83) (Sorokowska et al. 2014). In general, the internal consistency estimates of the TIPI were determined to be low (e.g., Atari et al. 2017; Jonason et al. 2011). In the current sample, Cronbach alphas were determined to be $\alpha = .70$, $\alpha = .56$, $\alpha = .78$, $\alpha = .63$ and $\alpha = .15$ for Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience subscales, respectively. In the current study, the internal consistency of the Openness to Experience was determined to be very low, but such a low estimate of this subscale's internal consistency was also found in prior research. For instance, Jonason et al. (2011) determined the alpha Cronbach for Openness to Experience to be $\alpha = .18$, whereas in the study by Atari et al. (2017) the alpha Cronbach for Openness was determined to be $\alpha = .13$.

Results

Descriptive Statistics

Analogically as in other studies aiming at developing of non-English versions of the research tools (e.g., Brailovskaia and Margraf 2018), in the first step we determined the descriptive statistics for the study major variables. The means and standard deviations for the major study variables stratified by relationship status and sex are provided in Table 1.

The Construct Validity of the Polish FBSS

Exploratory Factor Analysis

In order to assess whether fear of being single and anxious attachment represent distinct constructs, the present study followed the analytic strategy employed by Spielmann and colleagues (2013) in their original paper, i.e., performing a maximum likelihood exploratory factor analysis with promax rotation. The analysis included the Polish version of the Fear of Being Single Scale items and the items measuring anxiety dimension from the Revised Adult Attachment Scale (RAAS; Collins 1996).

As shown in Table 2, although fear of being single and anxious attachment loaded onto separate factors and none of the Fear of Being Single Scale items cross-loaded with anxious attachment items of the RAAS (defining cross-loading as greater than .40), or vice versa, item no. 1 from the FBSS did not load on factor 2 ('Fear of being single'), but neither did this item load on factor 1 ('Anxious attachment').

Confirmatory Factor Analysis

To examine the adequacy of the one-factor structure of the Polish FBSS, we performed a Confirmatory Factor Analysis (CFA) with the maximum likelihood estimation with bootstrap method using 1000 samples in the AMOS version 25. A one-factor CFA demonstrated a relatively acceptable mode fit ($\chi^2(9) = 38.014$, CFI = .923, TLI = .872, RMSEA = .136, 90% CI [.093, .182], SRMR = .045).

Mean Level Differences between Groups

The analysis of mean level differences in the domain of fear of being single was performed for groups distinguished in regard to relationship status (i.e., single and partnered status), voluntary vs. involuntary singlehood (i.e., voluntarily and involuntarily single individuals), and gender. In regard to relationship status, the authors posed the following open research question:

RQ1. Will single individuals report a similar or a different level of fear of being single as partnered individuals?

The above-mentioned open research question was formulated due to the notion put forward by Spielmann and colleagues (2013) that fear of being single may be experienced both by single and partnered individuals. On the other hand, considering that one of the normative experiences in people's lives is the desire for enduring intimate relationships (Spielmann et al. 2013) and that most people generally prefer being in a relationship to being single (Greitemeyer 2009), it could be expected that single individuals who experience an actual situation of not having a partner might report higher levels of fear of being single than partnered individuals who may anticipate a situation of not having a partner as a potential state.

In regard to voluntary singlehood, based on prior research suggesting that voluntary singlehood may be related to greater detrimental consequences than involuntary singlehood (e.g., Adamczyk 2017; Reynolds et al. 2007), it was expected that:

H1. Voluntarily single individuals would report lower levels of fear of being single in comparison to involuntarily single individuals.

Further, based on the results of the study on the Brazilian version of the FBSS, it was hypothesized that:

H2. Women would report higher levels of fear of being single in comparison to men.

Table 1 Descriptive statistics (Means and SD) of major variables for the total sample and stratified by relationship status and sex

Variables	Total sample (<i>N</i> = 175) Mean (SD)	Partnered individuals (<i>n</i> = 104) Mean (SD)	Single individuals (<i>n</i> = 71) Mean (SD)	Women (<i>n</i> = 104) Mean (SD)	Men (<i>n</i> = 71) Mean (SD)
Fear of being single	2.76 (0.99)	2.70 (0.95)	2.86 (1.05)	2.93 (0.95)*	2.53 (1.00)*
Satisfaction with relationship status	2.31 (0.82)	2.69 (0.51)***	1.76 (0.86)***	2.28 (0.80)	2.35 (0.47)
Romantic loneliness	3.16 (1.69)	2.09 (1.07)***	4.72 (1.13)***	3.33 (1.70)	2.91 (1.66)
Need to belong	3.27 (0.74)	3.28 (0.66)	3.25 (0.84)	3.41 (0.75)***	3.05 (0.67)***
Close attachment dimension	3.50 (0.79)	3.64 (0.71)*	3.29 (0.84)*	3.45 (0.84)	3.60 (0.70)
Anxiety attachment dimension	2.44 (1.00)	2.15 (0.88)***	2.87 (1.04)***	2.48 (1.05)	2.38 (0.96)
Dependence attachment dimension	3.34 (0.76)	3.51 (0.69)***	3.09 (0.80)***	3.31 (0.77)	3.38 (0.75)
Depressive symptoms	0.90 (0.46)	0.78 (0.39)***	1.06 (0.50)***	0.94 (0.49)	0.83 (0.40)
Emotional stability	4.20 (1.60)	4.42 (1.52)*	3.88 (1.68)*	4.06 (1.61)	4.40 (1.59)
Conscientiousness	4.97 (1.63)	5.09 (1.61)	4.79 (1.65)	5.28 (1.56)**	4.50 (1.63)**
Openness to experience	4.86 (1.14)	4.79 (1.16)	4.97 (1.11)	4.92 (1.04)	4.77 (1.28)
Agreeableness	5.06 (1.31)	5.18 (1.22)*	4.89 (1.42)*	5.22 (1.19)*	4.83 (1.44)*
Extraversion	5.17 (1.52)	5.31 (1.47)	4.97 (1.57)	5.32 (1.51)	5.00 (1.51)

Significant differences between partnered and single individuals and between women and men at *** $p < .001$; ** $p < .01$; * $p < .05$

In order to provide an answer to RQ1, and to verify H1 and H2, a two-way ANOVA was performed, which resulted in the following findings (see also Table 1).

The performed analysis demonstrated that single individuals experienced similar level of fear of being single as partnered individuals, $F(1,171) = 0.39$, $p = .531$, $\eta^2 = .00$. With respect to H1, the results of analysis performed on data involving a sample of 71 single individuals showed that 43 voluntarily single individuals (60.40%) reported lower fear of being single ($M = 2.52$, $SD = 0.98$) in comparison to 28 involuntarily single individuals (39.60%) ($M = 3.38$, $SD = 0.93$), $F(1,69) = 14.04$, $p = .000$, $\eta^2 = .17$. Finally, in regard to H2, the analysis showed that women reported higher level of fear of being single than did men, $F(1,171) = 5.18$, $p = .024$, $\eta^2 = .03$.

The Convergent and Discriminant Validity of the FBSS

Zero-Order Correlations between FBSS and Other Variables

As in the study by Spielmann and colleagues (2013), the zero-order correlations between fear of being single and the following variables were determined: anxious attachment, personality traits, need to belong, depression, and loneliness. However, in the current study, it was romantic loneliness that was investigated as it is more directly related to the domain of romantic partners, as opposed to loneliness as a unitary state investigated in the study by Spielmann and colleagues (2013). The zero-order correlations also included correlations between fear of being single and other variables that were not investigated in

Table 2 Items and Factor Loadings for the Polish Fear of Being Single Scale and the Revised Adult Attachment Scale

	Factor 1	Factor 2
The Fear of Being Single Scale Items		
I feel it is close to being too late for me to find the love of my life.	.25	.23
I feel anxious when I think about being single forever.	-.07	.79
I need to find a partner before I'm too old to have and raise children.	-.24	.78
If I end up alone in life, I will probably feel like there is something wrong with me.	.08	.73
As I get older, it will get harder and harder to find someone.	.07	.63
It scares me to think that there might not be anyone out there for me.	.20	.69
The Revised Adult Attachment Scale Items - Anxiety Dimension		
I often worry that romantic partners don't really love me	.80	-.06
I find that others are reluctant to get as close as I would like.	.59	-.05
I often worry that romantic partners won't want to stay with me.	.82	.01
When I show my feelings for others, I'm afraid they will not feel the same about me.	.75	.13
I often wonder whether romantic partners really care about me.	.81	.02
I want to get close to people, but I worry about being hurt.	.68	-.12

the original study by Spielmann and colleagues (2013), i.e., close and depend attachment dimensions. In the present study, it was therefore expected that:

- H3. Fear of being single would be positively related to anxious attachment.
- H4. Fear of being single would be negatively related to close and depend attachment dimensions.
- H5. Fear of being single would be negatively related to Emotional stability, Extraversion, Conscientiousness, Openness to Experience, and Agreeableness.
- H6. Fear of being single would be positively related to need to belong.
- H7. Fear of being single would be positively related to depression.
- H8. Fear of being single would be positively related to romantic loneliness.

The zero-order correlations are presented in Table 3.

As Table 3 demonstrates, on the general level, the zero-order correlations were in the expected directions. To be precise, fear of being single was positively and strongly related to anxious attachment, whereas it was not related either to close or depend attachment dimensions. Fear of being single was also negatively related to emotional stability but it was not related to other personality traits. In turn, the measures of interpersonal sensitivity were positively associated with fear of being single.

The Concurrent Validity of FBSS

In an attempt to extend the original study by Spielmann and colleagues (2013), we assessed the concurrent validity

of the FBSS by determining the predictive role of fear of being single for satisfaction with relationship status. At the same time, considering that prior studies (author citation) revealed differences in satisfaction with relationship status between single and partnered individuals (with single adults reporting lower satisfaction with relationship status in comparison to partnered adults), relationship status was included in the current study as a potential moderator of the link between fear of being single and satisfaction with relationship status. To be precise, we conducted a hierarchical regression predicting satisfaction with relationship status, with fear of being single (standardized) and relationship status (standardized) entered in Step 1. The interaction between fear of being single and relationship status was entered in Step 2. Results revealed that both fear of being single ($\beta = -.26$, $p = .000$) and current relationship status ($\beta = .54$, $p = .000$) were significant predictors of satisfaction with relationship status. These main effects were qualified by a significant interaction between fear of being single and relationship status ($\beta = .20$, $p = .001$; see Fig. 1).

Simple effects tests revealed that fear of being single did not predict satisfaction with relationship status in the group of partnered individuals ($\beta = -.10$, $p = .324$), whereas in the group of single individuals fear of being single was found to be a significant predictor of satisfaction with relationship status ($\beta = -.46$, $p = .000$). In other words, among partnered individuals, satisfaction with relationship status was independent of any levels of fear of being single, whereas among single individuals, those who were less fearful of being single reported higher satisfaction with their single status in comparison to those single adults who experienced higher fear of being single alongside lower satisfaction with their single status.

Table 3 Convergent and discriminant validity of the Polish Fear of Being Single Scale

Predictor	<i>r</i> (zero-order correlation)	β (simultaneous regression)
Attachment style		
Anxious attachment	.67***	.74***
Close attachment dimension	.03	.01
Dependence attachment dimension	-.11	.19
Personality		
Emotional stability	-.49***	-.69***
Extraversion	-.04	.31*
Conscientiousness	-.12	-.07
Openness to experience	-.10	-.17
Agreeableness	.04	.29**
Interpersonal sensitivity		
Need to belong	.50***	
Romantic loneliness	.32**	
Depressive symptoms	.49***	

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

Fig. 1 Satisfaction with relationship status as a function of fear of being single and relationship status

Reliability of the Polish FBSS

In the current study we assessed the reliability of the Polish FBSS, i.e., the precision of this measurement instrument and the trustworthiness of the scores produced with the instrument (Gushta and Rupp 2010), by employing the internal consistency reliability coefficient Cronbach's alpha which "[...] assumes that the total score on an instrument is computed as the simple (i.e., unweighted) sum of the scores from all items." (Gushta and Rupp 2010, p. 1239) and which was also used in the original study by Spielman and colleagues (2013). In the total sample of 175 Polish participants, internal consistency was assessed to be .83. In the group of single participants, internal consistency was estimated to be $\alpha = .84$, whereas in the group of partnered participants, internal consistency was $\alpha = .83$. In the group of female participants, internal consistency was $\alpha = .83$, whereas in the group of male participants, internal consistency was $\alpha = .84$.

Test–Retest Reliability of the Polish FBSS

The test–retest reliability of the Polish FBSS was estimated by correlating scores obtained in the first assessment and the second assessment conducted six months later. Out of 175 eligible participants in the first assessment, 77 respondents (44%) declared willingness to participate in the second stage of the study after a six-month interval. Out of those 77 respondents, the online survey distributed six months later was completed by 35 respondents aged 18 to 44 ($M = 26.85$, $SD = 7.78$), including 25 females and 10 males. The test–retest correlation in this sample was found to be $r = .77$ ($p = .001$, two-tailed).

Discussion

The present study was intended to develop and further validate the Polish-language version of the Fear of Being Single Scale

(FBSS), which is an instrument designed by Spielmann and colleagues (2013) to measure fear of being single. In the present study, we replicated and extended the findings obtained in the original study by Spielmann and colleagues (2013) in terms of construct validity, convergent and discriminant validity of the Polish FBSS, and its reliability, including test–retest reliability.

With respect to construct validity, we performed the exploratory and confirmatory factor analyses in order to verify the unidimensionality of the Polish FBSS. The results of the exploratory factor analysis provided evidence for the distinction between fear of being single and anxious attachment as theoretical constructs. However, the results also showed that item no. 1. from the Polish FBSS did not load in the factor termed 'fear of being single'. Furthermore, the confirmatory factor analysis resulted in a relatively acceptable model fit, and the model fit indices obtained in the current study were far from perfect model indices. At the same time, we have just recently collected data from 317 Polish participants who completed the Polish version of the Fear of Being Single Scale. The CFA performed on this sample yielded the following model fit indices: $\chi^2(9) = 32.60$, CFI = .948, TLI = .913, RMSEA = .091, 90% CI [.059, .125], SRMR = .040. As can be seen, these model fit indices obtained on data from different sample showed a good model fit. Therefore, we hypothesize that the sample utilized in the current study possesses some specific features that might have negatively affected the CFA results.

Furthermore, we determined the construct validity of the Polish FBSS by investigation of the mean level differences exceeded those in the original study by Spielmann and colleagues (2013). To be precise, our RQ1 pertained to the potential differences in the domain of fear of being single between single and partnered individuals. The performed analysis demonstrated that the two groups did not differ in regard to the fear of being single, which seems to support the notion put forward by Spielmann and colleagues (2013) that fear of being single may manifest itself among single as

well as partnered individuals. The current study also tested hypotheses H1 and H2 concerning the differences in the domain of fear of being single between voluntarily and involuntarily single individuals and between women and men. The results of the performed analyses confirmed the hypotheses, showing higher levels of fear of being single among involuntarily single individuals and women. This pattern of results once again suggests that involuntary singlehood, when perceived by an individual as beyond his or her own choice, may be related to more negative outcomes, including fear of being single, than voluntary singlehood seen as a result of one's own decision (author citation; Reynolds et al. 2007). In turn, the pattern of gender differences revealed by the present study was fully consistent with the findings obtained by da Fonseca and colleagues (da Fonseca et al. 2017) in their study on the Brazilian version of the FBSS. The higher level of fear of being single reported by women may be, in turn, explained in reference to prior studies showing for instance that relationship status is a more important issue for young women's than for young men's emotional well-being (Simon and Barrett 2010). Therefore, the current situation or anticipated situation of not having a partner may be associated with greater fear of being single among women compared to men.

In the current study, also the convergent and discriminant validity of the Polish FBSS was assessed by determining the zero-order correlations between the Polish FBSS and other variables. First, in line with Spielmann and colleagues' (2013) results, fear of being single was found to be positively related to anxious attachment (H3), and anxious attachment positively predicted fear of being single. This hypothesis was fully supported by the findings, showing a positive and strong correlation between anxious attachment and fear of being single, as observed in the original study by Spielmann and colleagues (2013).

In addition, the study by Spielmann and colleagues (2013) was expanded by investigating the zero-order correlations between fear of being single and close and depend attachment dimensions. It was expected that these correlations would be negative (H4), but the analysis showed them to be nonsignificant. Furthermore, it was hypothesized that fear of being single would be negatively related to Emotional stability (H5). This hypothesis was fully supported by the findings. Furthermore, in the study by Spielmann and colleagues (2013), fear of being single was negatively and weakly related to Extraversion, Conscientiousness, Openness to Experience, and Agreeableness. In the current study, all the correlations between fear of being single and the above-mentioned personality traits were found to be nonsignificant, which was counter to the hypothesis (H5) assuming that fear of being single would be negatively related to Extraversion,

Conscientiousness, Openness to Experience, and Agreeableness. At the same time, it is important to remember that in the current study the internal consistency of Openness to Experience subscale was determined to be very low. Finally, similarly to the study by Spielmann and colleagues (2013) and in line with the hypotheses (H6, H7 and H8), fear of being single was positively related to – though distinct from – such measures of interpersonal sensitivity as depression, romantic loneliness, and need to belong.

As an attempt to evaluate the concurrent validity of the Polish FBSS, this study extended the original study by Spielmann and colleagues (2013) and provided results concerning the associations between fear of being single and satisfaction with relationship status in the moderating perspective of relationship status. More specifically, the results of a hierarchical regression analysis demonstrated that both fear of being single and current relationship status were significant predictors of satisfaction with relationship status; however, there was a significant interaction between fear of being single and relationship status. To be precise, fear of being single did not predict satisfaction with relationship status among partnered adults, whereas among single adults, fear of being single was found to be a significant predictor of satisfaction with relationship status. In other words, among partnered individuals, their satisfaction with relationship status was independent of fear of being single, whereas among single individuals, those who were less fearful of being single reported higher satisfaction with their single status in comparison to those single adults who experienced higher fear of being single and who, at the same time, reported lower satisfaction with their single status. This pattern of results may point to a unique role of fear of being single for relational outcomes, as already suggested by Spielmann and colleagues (2016), in particular among single individuals who experienced a current, not anticipated – as in the case of partnered individuals – situation of not having a partner, which was related to increased fear of being single. This increased fear of being single, in turn, may contribute to lower levels of satisfaction with single status.

Finally, using the Cronbach's alpha, we established that the reliability of the Polish FBSS is high. In addition, expanding the original study by Spielmann and colleagues (2013), the current study also determined the test–retest reliability of the Polish FBSS to be $r = .77$ over a lag of six months and this value represents a strong correlation (e.g., Riordan et al. 2018).

Despite the merits of the current investigation, four major limitations ought to be considered. First and foremost, the Polish version of the FBSS was developed and validated using a relatively small sample of adults, the

majority of whom were university students and graduates. Also, the test–retest reliability of the Polish FBSS was determined on a small sample size. Therefore, future studies need to be performed on larger samples. The second major limitation concerns the correlational nature of the study which does not make it possible to determine any cross-lagged associations between fear of being single and other examined variables. For example, regarding the differences observed in the present study between voluntarily and involuntarily single adults related to the domain of fear of being single, the correlational nature of the data gathered for the study precludes the possibility of determining if low level of fear of being single contributes to choosing singlehood or whether the association is of the opposite direction. Therefore, further research would benefit from analyzing the associations between fear of being single and other variables in longitudinal studies. Thirdly, the test–retest reliability of the Polish FBSS was carried out over a relatively long interval, that is, six months. Therefore, further studies would benefit from investigating the test–retest reliability over shorter periods of time, even daily, in line with the suggestion made by Spielmann et al. (2016) that fear of being single may be also characterized by some fluctuations, similarly to the Big Five personality traits, attachment style prototypes, rejection sensitivity and loneliness. If those fluctuations are also observed in regard to fear of being single, it would open up a new area of inquiry focusing on studying factors that contribute to daily fluctuations of fear of being single and the possibility of their experimental manipulation.

Furthermore, the present study did not include all of the instruments used in the original study by Spielmann and colleagues (2013); therefore, it was not possible to examine the same spectrum of associations between fear of being single and other variables. In addition, unlike the original study by Spielmann and colleagues (2013), the present study did not examine the role of fear of being single for lowering relationship standards in existing relationships and when selecting new partners, for greater dependence in less satisfying relationships, for the dissolution of a relatively unsatisfactory relationship, for the interest in less responsive and less physically attractive targets, and for reduced selectivity in choosing romantic partners. Therefore, future research involving Polish samples should explore the role of fear of being single for a wide range of relational outcomes, as well as investigate the associations between fear of being single and other psychological constructs, such as fear of missing out (FoMO) which is “[...] characterized by a desire to remain socially connected and may manifest itself as a form of social anxiety [...]” (Riordan et al. 2015, p. 1).

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Data Availability The datasets generated during and analysed during the current study are available in the Open Science Framework repository, <https://osf.io/ujz4w/>.

Compliance with Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

Informed Consent Informed consent was obtained from all individual participants included in the study.

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