Clinical Neuropsychiatry (2013) ***10****, 3-4,* 164-170

A FACTOR ANALYTIC STUDY OF THE BOREDOM PRONENESS SCALE (BPS)

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Abstract

Objective: Boredom is an emotion characterized of lack of pleasure and aims. Existing data support the validity of the Boredom Proneness Scale (BPS) as an index of boredom proneness. The factor structure of the instrument has been widely examined and yielding inconsistent and contradictory results. Aims: What is needed is empirical confirmation of the possibility that the BPS captures several facets of boredom attitude. To this end, the current study examined the factor structure of the scale within a nonclinical sample.

Method: We administered the BPS to 312 Italian students (39.7% male and 60.3% female), ranging in age from 18 to 43 years (M = 20.96, SD = 3.55), attending several academic programs. In order to determine the dimensional structure underlying the questionnaire, both exploratory and confirmatory factor analyses were performed. Cronbach's coefficient alpha was used to estimate internal consistency reliability.

Results: Exploratory factor analysis revealed a three-factor solution: Internal Stimulation-Creativity, Apathy, and External Stimulation-Challenge. Goodness of fit indices confirmed the adequacy of the tested models. Alpha coefficients were acceptable for all the three scales.

Conclusions: Results provide support for the unidimensionality of the three facet scales for the BPS. Limitations and need for further investigations are discussed.

Key words: BPS, boredom, boredom proneness, psychometrics, factorial structure

Declaration of interest: the authors declare no competing financial interests

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Introduction

Boredom is considered as a negative affect characterized of unpleasure and lack of realistic aims. In literature, we can find various theories to explain this emotion. For instance, according to the psychoanalyst Ralph R. Greenson (1953), boredom is a "phenomenon which is easier to describe than to define. The uniqueness of the feeling of being bored seems to depend upon the coexistence of the following components: a state of dissatisfaction and a disinclination to action; a state of longing and an inability to designate what is longed for; a sense of emptiness; a passive, expectant attitude with the hope that the external world will supply the satisfaction; a distorted sense of time in which time seems to stand still." Greenson distinguishes also two different types of boredom: "apathetic" and "agitated" boredom. The first type is a consequence of repression and inhibition of instinctual aims; "Agitated" boredom, however, is a secondary state reflecting the failure of gratifications of wishes and fantasies.

Another psychoanalyst, Wangh (1975), considers boredom as a "inhibition of fantasy", which "often occurs because of an unconscious fear that fantasy might lead to action of libidinal or aggressive nature – an impulse to masturbate or strike out – which in turn would bring about danger or pain" (p. 543). For Eisnitz (1974) it is symptomatic of a disturbance in this experience of the self. For Oram (2005) boredom is related to narcissistic vulnerability, in subjects with a histories of early traumatic experiences.

Other researchers consider cognitive and psychosocial variables to understand the boredom. In accordance with this approach, for some authors boredom is an emotional state that results of impoverished external stimuli (Berlyne 1960, Darden and Marks 1999, Mikulas and Vodanovich 1993, Wegner et al. 2008) or from a lack of cognitive skills necessary to intrinsically generate interest (Watson et al. 1994). More often, boredom has been conceptualized as an emotional state resulting from inefficient or deficient emotional, cognitive or attentional processes (Cheyne, Carriere and Smilek

Submitted September 2013, Accepted September 2013

2006, Shaw, Caldwell and Kleiber 1996), created by suboptimal levels of cortical arousal (Vodanovich 2003) or neurasthenia (overstimulation).

Much research showed that boredom, particularly in the young, is a significant risk factor for many psychopathological disorders (e.g., substance abuse, internet addiction, pathological gambling, eating disorders, depression, anxiety, pathological dissociation, borderline personality disorder, psychopathy, antisocial personality disorder; Johnston and O'Malley 1986, Iso-Ahola and Crowley 1991, Hesselbrock and Hesselbrock 1992, Hare 1999; Sommers and Vodanovich 2000, Whiteside and Lynam 2001, Corvinelli 2005, Farrington 2005, Barone 2010, Craparo 2011, Fortune and Goodie 2011, Franzoni et al. 2013), and juvenile behavioral disturbances (Edens et al. 2001, Catchpole and Gretton 2003, Kuntsche et al. 2005, Kearney 2008, Wegner and Flisher 2009, Farrington and Baldry 2010).

Measurement of boredom proneness

One of the most used instruments to evaluate the boredom proneness is the *Boredom Proneness Scale* (BPS, Farmer and Sundberg 1986). The theoretical background of this scale considers the boredom proneness as a pathological personality trait significantly and positively associated with depression, hopelessness, loneliness, amotivational orientation, and negatively related to life satisfaction and autonomy orientation.

The first validation study was performed on 222 college undergraduate volunteers. It obtained satisfactory levels of internal consistency (coefficient $\alpha = .79$) and test-retest reliability for both sexes ($r = .83$), with more stability exhibited in the females ($r = .88$) than males ($r = .74$). About correlations with other boredom scales, results showed a satisfactory correlation between BPS and Job Boredom (JB) Scale ($r = .49$, $p<.001$), and a weak relationship between BPS and Boredom Susceptibility Scale (ZBS) ($r = .25$, $p<.01$). In addition to these outcomes, there is a controversy about its factorial structure (Farmer and Sundberg 1986).

For instance, Ahmed (1990) administered the scale to 154 students and he found support for two factors using the true–false format of the scale. In a research on a sample of 787 adults employed in a variety of occupations, also Vodanovich, Wallace, and Kass (2005) found two general factors: Internal Stimulation, and External Stimulation. Vodanovich, and Kass (1990), administering the BPS to a sample of primarily White college students in the United States (N = 385), distinguished five factors: a) External Stimulation; b) Internal Stimulation; c) Affective Responses; d) Perception of Time; e) Constraint.

Based on these conflicting results and in line with many previous studies suggesting the need to test the factor structure stability across cultures and samples of commonly used instruments in several fields of psychological research (Triscari, Faraci, D'Angelo and Urso 2011, Faraci, Triscari, D'Angelo and Urso 2011, Faraci 2011, Gori et al. 2013, Manna, Faraci and Como 2013, Craparo, Faraci, Rotondo and Gori in press), we consider valuable to report further empirical evidences concerning the estimation of the dimensionality of the BPS.

Methods

Participants and Procedure

Three hundred and twelve college students (34.6% male and 65.4% female), ranging in age from 18 to 43 years ($M = 20.95$, $SD = 3.11$), took part in the study. They were enrolled in several degree courses (13.1% Sociology, 46.8% Psychological Sciences and Techniques, .3% Educational Sciences, 29.5% Motor Sciences, 5.4% Clinical Psychology, 3.8% Defence and Security Sciences, 1% Modern Languages and Cultures). Participation was voluntary. The only personal information asked was their gender and age. They were assured that they could terminate their participation any time without penalty. The research had obtained ethical approval by a university committee.

Confirmatory factor analyses were performed on a random half-sample of participants (sample 2). They were 312 students (39.7% male and 60.3% female), ranging in age from 18 to 43 years ($M = 20.96$, $SD = 3.55$), attending several academic programs (10.3% Sociology, 42.3% Psychological Sciences and Techniques, 36.5% Motor Sciences, 4.5% Clinical Psychology, 5.1% Defence and Security Sciences, 1.3% Modern Languages and Cultures).

The BPS items were translated into Italian by a bilingual Italian national and then bask-translated into English by a second bilingual Italian national in order to detect inaccuracies, ambiguities, vagueness, conceptual change.

Data analyses

In order to determine the dimensional structure underlying the questionnaire, both exploratory and confirmatory factor analyses were performed.

Kaiser's criterion, the Scree Test, and random data parallel analysis were checked to decide the number of factors to be extracted. As known, the eingenvalues-greater-than-one criterion potentially inflates the number of factors to be extracted, because of its sensibility to the number of submitted variables. Cattell's (1966) scree test, drawing on the relative values of the eigenvalues, is considered a more reliable method, especially in cases where there is a clear and easily interpretable scree slope (Zwick and Velicer 1986). When the determination of how many factors to include is more challenging, parallel analysis (Horn 1965) can offer greater efficiency for determining the correct number of factors to accept. Based on PA method, we compared obtained eigenvalues against those generated from random data. Factors are to be kept when their eigenvalues are larger than those from the 95th percentile in multiple simulations using random data. Factor loadings for the subscales were considered notable if they loaded .35 or greater on the extracted factors.

Cronbach's coefficient alpha was used to estimate internal consistency reliability. The Pearson correlation coefficient was used to investigate to what extent the factor scores were correlated.

The factor solution indicated by the EFA was cross-validated on a random half of the whole (sample 2), using the software program EQS (Bentler 2006) via robust maximum-likelihood estimation. Several measures of fit exist for evaluating the quality of CFA models, each developed under a somewhat different theoretical framework and focusing on different components of fit (Browne and Cudeck 1993). For

this reason, it is generally recommended that multiple measures be considered to highlight different aspects of fit (Hu and Bentler 1995). We assessed the goodness of fit using the chi-square and the comparative fit index (CFI; Bentler 1990). A nonsignificant chi-square and values greater than 0.90 for the CFI are considered to reflect good model fit, and values between .85 and .90 reflect moderate model fit. In addition, the root-mean-square error of approximation (RMSEA; Steiger 1990) was reported with 90% confidence intervals, for which a value less than .05 indicates satisfactory fit and values up to .08 indicate moderate fit between the specified model and the sample data (Browne and Cudeck 1993), and the standardized root-mean-square residual (SRMR; Ullman 2001), for which a value less than .05 indicate good model fit and values up to .10 indicate acceptable fit. We also reported the Satorra-Bentler scaled chi-square statistic, which compensates for multivariate non-normal data (Hu, Bentler and Kano 1992).

Results

Exploratory factor analyses

The initial 28 × 28 correlation matrix was suitable for factor analysis (Kaiser-Meyer-Olkin index = .71; Bartlett's sphericity [chi]^2(378, N = 312) = 2.325, p = .000).

Principal axis analysis (with promax rotation) was conducted on the 28-item BPS undertaken by the whole group of participants. The factoring analysis performed without fixing number of factors to extract yielded nine factors explaining 44.63% of the variance. However, an examination of the loading patterns suggested over extraction, with several factors defined by only two variables. The Maximum Likelihood factors method of extraction was employed. Fixing numbers of factors to five, the Goodness-of-fit Test was significant, while fixing numbers of factors to a value greater than five maximum likelihood estimation failed to converge. Based on extraction sums of squared loadings, factors with eigenvalues greater than 1 were only four instead, with the fourth factor eigenvalue very close to 1 (1.050). Inspection of the scree plot was not helpful in this case, because of a somewhat meaningless and questionable slope.

Parallel analysis determined 15 factors to be extracted. The resulting number of factor is evidently over-defined, with several factors comprised by only one or two indicators. Based on Kaiser's criterion, five factors were extracted. Items 24 ("Among my friends, I am the one who keeps doing something the longest"), 27 ("It seems that the same things are on television or the movies all the time; it's getting old"), 12 ("I am seldom excited about my work"), 9 ("Many things I have to do are repetitive and monotonous"), 6 ("Having to look at someone's home movies or travel slides bores me tremendously"), 15 ("I am good at waiting patiently"), and 23 ("I have so many interests, I don't have time to do everything"), which failed to load .35 or greater on the extracted factor, were removed. Items 16 ("I often find myself with nothing to do-time on my hands"), 17 ("In situations where I have to wait, such as a line or queue, I get very restless"), 1 ("It easy for me to concentrate on my activities"), and 10 ("It takes more stimulation to get me going than most people") were eliminated for loading simultaneously on two factors without a difference of at least .30 between loading on the primary factor and loading on other factors.

Domains of psychological constructs are expected to be interrelated in most populations. Therefore, the principal axis analysis was repeated with promax rotation to arrive at an oblique solution. In addition to theoretical consideration in favor of an oblique solution, a comparison of loadings in the hyperplane suggested oblique was more appropriate than orthogonal.

On examination of the pattern of loadings and accepting a minimum of three items for each factor, we retained three factors explaining 31.71% of the variance.

The three-factor solution showed 6 items loading on Factor 1 (characterized as Internal Stimulation-Creativity), 6 items on Factor 2 (characterized as Apathy), and 5 items on Factor 3 (characterized as External Stimulation-Challenge).

Results of the exploratory factor analysis are depicted in **table 1**.

Table 1. *Factor loadings of the BPS items*

Item	F1	F2	F3
13. In any situation I can usually find something to do or see to keep me interested.	.755		
11. I get a kick out of most things I do.	.642		
18. I often wake up with a new idea.	.540		
8. I find it easy to entertain myself.	.447		
7. I have projects in mind all the time, things to do.	.439		
22. Many people would say that I am a creative or imaginative person.	.432		
4. I often find myself at "loose ends", not knowing what to do.		.781	
2. Frequently when I am working I find myself worrying about other things.		.541	
5. I am often trapped in situations where I Have to do meaningless things.		.533	
14. Much of the time I just sit around doing nothing.		.518	
28. When I was young, I was often in monotonous and tiresome situations.		.434	
3. Time always seems to be passing slowly.		.379	
25. Unless I am doing something exciting, even dangerous, I feel half-dead and dull.			.612
26. It takes a lot of change and variety to keep me really happy.			.569
19. It would be very hard for me to find a job that is exciting enough.			.476
20. I would like more challenging things to do in life.			.422
21. I feel that I am working below my abilities most of the time.			.403
% explained variance	14.98	11.01	5.73

Alpha coefficients can be considered acceptable for all the three scales: α = .70, α = .71, and α = .63 for Internal Stimulation-Creativity, Apathy, and External Stimulation-Challenge, respectively. **Table 2** presents the corrected item-total correlations for all scales. Since the instrument is not yet validated in Italian language, its overall internal consistency in the present sample was also tested before factor analysis: α = .79.

In addition, we evaluated the relative independence of scores among the BPS's three scales by comparing correlations among the rotated factors as well as examining the correlations among the three scale scores. The highest associations were between the F2 and F3 scales (r = .36 or .28 p < .01 between observed scores) and indicated that, at minimum, 87% of the variance in each scale was independent of scores from the other two scales. The factors intercorrelations were absent or moderate, indicating little shared variation between them (see **table 3** and **table 4**).

Confirmatory factor analyses

CFI value showed that the verified models had good fit, with values greater than .95. The RMSEA also indicated an acceptable fit for the tested models. The adequacy of the models was also considered in terms of the parameter estimates: all the factor loadings were positive and statistically significant (p<.05), suggesting that all items are good indicators of their respective factors. All factor loadings were appreciable, ranging from .37 to .81. The factor loadings for the factor 1 ranged from .65 to .81, the factor loadings for the second factor ranged from .81, the factor loadings for the second factor ranged from .53 to .65. Path diagrams and standardized parameter estimates are illustrated in **figures 1-3**.

Fit indices for the three extracted factors are shown in **table 5**.

Discussion

This study examined the factorial structure of the BPS in a non-clinical sample. The factor structure of the scale was examined using exploratory and confirmatory factor analyses among a sample of Italian students. Support was found, in this sample, for the unidimensionality of each of the three facets – Internal Stimulation-Creativity; Apathy; External Stimulation-Challenge – and the items were all shown to be good measures of their latent factor. Reliability analyses indicated acceptable internal consistency, and the scales were weakly positively correlated, suggesting a high level of score independence.

We can consider that there are a number of limitations in our study. First, the lack of a previous comprehensive validation of the scale in the Italian version. Second, our sampling methodology did not permit us to know how representative our sample was of the population of students attending university courses. The large range of age of subjects (18-43) may represent a further source of sampling-bias. Third, as much of other scale validation research in this area has

Table 2. *Corrected item-total correlations*

Item	F1	F2	F3
Item 13	.576		
Item 11	.513		
Item 18	.428		
Item 22	.346		
Item 8	.372		
Item 7	.368		
Item 4		.598	
Item 2		.457	
Item 5		.433	
Item 14		.484	
Item 28		.336	
Item 3		.340	
Item 25			.442
Item 26			.405
Item 19			.406
Item 21			.335
Item 20			.324
Cronbach's alpha	.70	.71	.63

Note. F1 = *Internal Stimulation-Creativity*; F2 = *Apathy*; F3 = *External Stimulation-Challenge.*

Table 3. *Factor correlation matrix*

Factor	F1	F2	F3
F1	___		
F2	.159	___	
F3	-.025	.362	___

Table 4. *Intercorrelations among the three subscales scores of the BPS*

Factor	F1	F2	F3
F1	___		
F2	.123*	___	
F3	.034	.282**	___

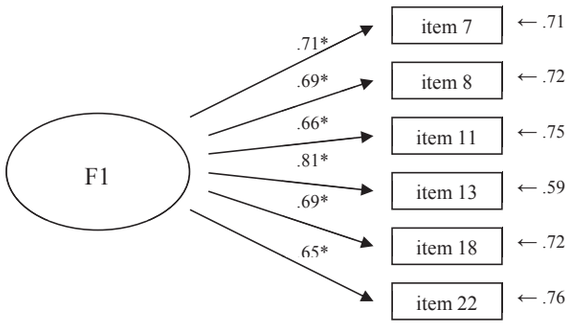
Note. *p ≤ .05, ** p ≤ .01, two-tailed.

Table 5. *Fit indices for the three factors*

Factor	χ^2	*df*	*p*	NFI	NNFI	CFI	SRMR	RMSEA	90% CI
F1	19.48	8	.124	.94	.93	.96	.049	.096	.042-.151
F2	13.92	8	.084	.92	.93	.96	.081	.069	.000-.128
F3	2.27	4	.685	.97	1	1	.025	.000	.000-.093

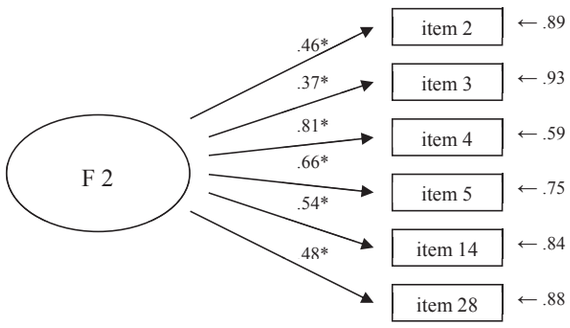
Note. F1 = Internal Stimulation-Creativity; F2 = Apathy; F3 = External Stimulation-Challenge.

Figure 1. *F1 empirical model (standardized solution)*



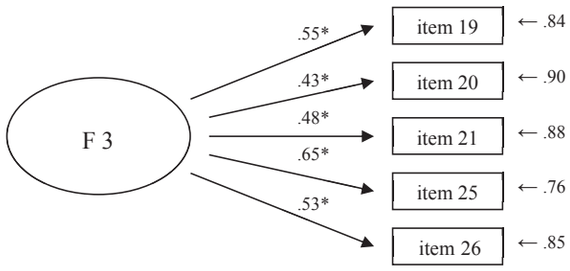
Note. F1 = Internal Stimulation-Creativity; *p ≤ 05.

Figure 2. *F2 empirical model (standardized solution)*



Note. F2 = Apathy; *p ≤ 05.

Figure 3. *F3 empirical model (standardized solution)*



Note. F3 = External Stimulation-Challenge; *p ≤ 05.

done, we used just a college student sample. Therefore, we caution that we cannot be sure that our results generalize. Fourth, the sample is lightly weighted towards females (approximately 65%), and this uneven sampling is not ideal for psychometric study. However, the proportion is not so unequal but sample size did not permit to perform gender-separate exploratory factor analyses and multisample confirmatory factor analyses in order to verify structural invariance for males and females. The excess of females may be the result of the voluntary method of sampling. Indeed, it is commonly recognized that females are more likely to accept to participate to research surveys. Further, a recruitment based on volunteers is critical as well, since volunteers may be strongly different from non-volunteers as regards boredom proneness.

Outcomes from the current study need to be replicated and extended. Although it is tempting to regard BPS factors as potential subscales, one must not forget that factor names reflect the commonality of the retained items but do not necessarily imply adequate sampling of that specific domain. Additional validation of the factor solution is obviously needed, including comparisons with other wide and, if at all possible, representative samples of individuals. It might be that some items are less representative and relevant to the construct with samples that have experienced more or less life boredom situations. Fort this reason, we recommend further investigation of the structure of the BPS with larger and more varied samples of participants.

References

Barone L (2010). Developmental protective and risk factors in borderline personality disorder: A study using the Adult Attachment Interview. *Attachment and Human Development* 5, 64-77.

Bentler PM (1990). Comparative fit indexes in structural models. *Psychological Bulletin* 107, 238-246.

Bentler PM (2006). *EQS 6 structural equations program manual*. Multivariate Software, Encino.

Bentler PM, Bonett DG (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin* 88, 588-606.

Berlyne DE (1960). *Conflict, arousal and curiosity*. McGraw-Hill, New York.

Browne MW, Cudeck R (1993). Alternative ways of assessing model fit. In Bollen KA, Long JS (eds) *Testing structural equation models*, pp. 136-162. Sage, Newbury Park, CA.

Catchpole REH, Gretton HM (2003). The Predictive Validity of Risk Assessment with Violent Young Offenders. *Criminal Justice and Behavior* 30, 6, 688-708.

Cattell RB (1966). The screen test for the number of factors. *Multivariate Behavioral Research* 1, 140-161.

Cheyne JA, Carriere JSA, Smilek D (2006). Absent-mindedness: Lapses of conscious awareness and everyday cognitive failures. *Consciousness and Cognition* 15, 578-592.

Corvinelli A (2005). Alleviating boredom in adult males recovering from substance use disorder. *Occupational Therapy in Mental Health* 21, 2, 1-11.

Craparo G (2011). Internet addiction, dissociation, and alexithymia. *Procedia - Social and Behavioral Sciences* 30, 1051-1056.

Craparo G, Faraci P, Rotondo G, Gori A (2013). The Impact of Event Scale–Revised: Psychometric properties of the Italian version in a sample of flood victim. *Neuropsychiatric Disease and Treatment*, pp. 1427-1432

Darden DK, Marks AH (1999). Boredom: A socially disvalued emotion. *Sociological Spectrum* 19, 13-25.

Edens JF, Skeem JL, Cruise KR, Cauffman E (2001). Assessment of "juvenile psychopathy" and its association with violence: a critical review. *Behavioral Sciences and The Law* 19, 1, 53-80.

Eisnitz AJ (1974). A discussion of the paper by J.L.Weinberger and J.J. Muller on "The American Icarus revisited: Phallic narcissism and boredom". *International Journal of Psycho-Analysis* 55, 587-590.

Faraci P (2011). *LJI – Leadership Judgement Indicator.* Organizzazioni Speciali Giunti, Firenze.

Faraci P, Triscari MT, D'Angelo V, Urso V (2011). Fear of flying assessment: A contribution to the Italian validation of two self-report measures. *Review of Psychology* 18, 2, 91-100.

Farrington DP (2005). The Importance of Child and Adolescent Psychopathy. *Journal of Abnormal Child Psychology* 33, 4, 489-497.

Farrington DP, Baldry AC (2010). Individual risk factors for school bullying. *Journal of Aggression, Conflict and Peace Research* 2, 1, 4-16.

Fortune EE, Goodie AS (2011). The Relationship Between Pathological Gambling and Sensation Seeking: The Role of Subscale Scores. *Journal of* Gambling *Studie*s 26, 3, 331-346.

Franzoni E, Gualandi S, Caretti V, Schimmenti A, Di Pietro E, Pellegrini G, Craparo G, Franchi A, Verrotti A, Pellicciari A (2013). The relationship between alexithymia, shame, trauma, and body image disorders: investigation over a large clinical sample. *Neuropsychiatric Disease and Treatment* 9, 185-193.

Gori A, Giannini M, Socci S, Luca M, Dewey D, Schuldberg D, Craparo G (2013). Assessing social anxiety disorder: psychometric properties of the Italian Social Phobia Inventory (I-SPIN). *Clinical Neuropsychiatry* 10, 1, 37-42.

Greenson R (1953). On Boredom. *Journal of the American Psychoanalytic Association* 1, 7-21.

Hare R (1999). *Without conscience*. The Guilford Press, New York.

Hesselbrock MN, Hesselbrock VM (1992). Relationship of Family History, Antisocial Personality Disorder and Personality Traits in Young Men at Risk for Alcoholism. *Journal of Studies on Alcohol and Drugs* 53, 619-625.

Horn JL (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika* 30, 179-185.

Hu L, Bentler PM (1995). Evaluating model fit. In Hoyle R. (ed) *Structural equation modelling, issues, concepts, and applications*, pp. 76-99. Sage, Newbury Park, CA.

Hu L, Bentler PM (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6, 1-55.

Hu L, Bentler PM, Kano Y (1992). Can test statistics in covariance structure analysis be trusted? *Psychological Bulletin* 112, 351-362.

Iso-Ahola SE, Crowley ED (1991). Adolescent substance abuse and leisure boredom. *Journal of Leisure Research* 23, 3, 260-271.

Johnston LD, O'Malley PM (1986). Why do the nation's students use drugs and alcohol? Self-reported reasons from nine national surveys. *The Journal of Drug Issues* 16, 1, 29-66.

Kearney CA (2008). School absenteeism and school refusal behavior in youth: A contemporary review. *Clinical Psychology Review* 28, 451-471.

Kline RB (1998). *Principles and practice of structure equation modelling*. Guilford Press, New York.

Kuntsche E, Knibbe R, Gmel G, Engels R (2005). Why do young people drink? A review of drinking motives. *Clinical Psychological Review* 25, 7, 841-861.

Manna G, Faraci P, Como MR (2013). Factorial structure and psychometric properties of the Sensation Seeking Scale - Form V (SSS-V) in a sample of Italian adolescents. *Europe's Journal of Psychology* 9, 2, 276-288.

Mikulas W, Vodanovich S (1993). The essence of boredom. *The Psychological Record* 43, 3-12.

Oram K (2005). Boredom: Unprocessed pain in the treatment of a narcissistic boy and his family. *Journal of Infant, Child, and Adolescent Psychotherapy* 4, 233-243.

Shaw SM, Caldwell LL, Kleiber DA (1996). Boredom, stress and social control in the daily activities of adolescents. *Journal of Leisure Research* 28, 274–292.

Sommers J, Vodanovich SJ (2000). Boredom proneness: Its relationship to psychological and physical health symptoms. *Journal of Clinical Psychology* 56, 149-155.

Steiger JH (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research* 25, 173-180.

Triscari MT, Faraci P, D'Angelo V, Urso V (2011). Paura di volare: struttura fattoriale di due questionari. *Psicoterapia Cognitiva e Comportamentale* 17, 2, 211-226.

Ullman JB (2001). Structural equation modelling. In Tabachnick BG, Fidell LS (eds) *Using multivariate statistics*, pp. 653-771. Allyn & Bacon, Needham Heights, MA.

Vodanovich SJ (2003). Psychometric measures of boredom: A review of the literature. *Journal of Psychology* 137, 569-593.

Wangh M (1975). Boredom in psychoanalytic perspective. *Social Research* 42, 538-550.

Watson PJ, Hickman SE, Morris RJ, Stutz NS, Whiting L (1994). Complexity of self-consciousness subscales: Correlations of factors with self-esteem and dietary restraint. *Journal of Social Behavior and Personality* 9, 761-774.

Wegner L, Flisher AJ, Chikobvu P, Lombard C, King G (2008). Leisure boredom and high school dropout in Cape Town, South Africa. *Journal of Child & Adolescent Mental Health* 31, 3, 421-431.

Whiteside SP, Lynam DR (2001). The Five Factor Model and impulsivity: using a structural model of personality to understand impulsivity. *Personality and Individual Differences 30*, 669-689.

Zwick WR, Velicer WF (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin* 99, 432-442.