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Basic Psychometric Properties and Italian Normative Data of the DSM-5 Level 2 Anger, Anxiety, and Depression Scales, and DSM-5 Severity of Dissociative Symptoms Scale

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Abstract

Background: To promote the shift to a dimensional approach to diagnosis, the *DSM-5/DSM-5-TR* incorporates self-report dimensional measures of *DSM-5* cross-cutting symptoms. Against this background, the aim of the present study is examining the basic psychometric properties of the measures and providing clinicians with Italian normative data for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and for the *DSM-5* Severity of Dissociation Symptoms Scale.

Methods: Sample 1 (N = 1567) community-dwelling adult participants were administered the *DSM-5* Level 2 Anger Scale, whereas Sample 2 (N = 2378) community-dwelling adult participants were administered the *DSM-5* Level 2 Anxiety and Depression Scales, and the *DSM-5* Severity of Dissociation Symptoms Scale. Weighted least square mean and variance adjusted confirmatory factor analyses and exploratory structural equation models were carried out to test item unidimensionality.

Results: Internal consistency reliability (i.e., Cronbach's α coefficient) values for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and for the *DSM-5* Severity of Dissociation Symptoms Scale were all adequate. Confirmatory factor analysis results supported adequate fit of the one-factor model of the *DSM-5* Level 2 Anger Scale and *DSM-5* Severity of Dissociation Symptoms Scale. Bifactor models of the *DSM-5* Level 2 Anxiety and Depression Scales yielded adequate fit indices.

Conclusions: Providing clinicians and researchers with normative data and basic psychometric properties of *DSM-5* measures could be useful in order to allow for dimensional assessment of psychopathology. In turn, this may facilitate the adoption of *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and the *DSM-5* Severity of Dissociative Symptoms Scale in routine clinical assessment.

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DSM-5 Level 2 Anger Scale; *DSM-5* Level 2 Anxiety Scale; *DSM-5* Level 2 Depression Scale; *DSM-5* Severity of Dissociation Symptoms Scale; Reliability; Factor structure; Bifactor models; Normative data.

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1. Introduction

As Regier and colleagues (Regier et al., 2013) nicely pointed out, the *Diagnostic and Statistical Manual for Mental Disorders–Fifth edition (DSM-5*; American Psychiatric Association [APA], 2013) introduced major changes in the description of mental disorders which derived from applied research, clinical and public health needs, and validity issues of the *DSM-IV* (APA, 1994) classification system. In this respect, although a categorical approach to diagnosis was retained in the *DSM-5*, a shift towards a dimensional approach to diagnosing psychopathological manifestations has begun (Regier et al., 2013; Tarescavage et al., 2021). This change is based on an impressive amount of evidence documenting the dimensional nature of the wide majority of mental disorders (e.g., Haslam et al., 2020); moreover, moving towards a dimensional approach to diagnosis will help clinicians to better understand co-occurring conditions and the complexity of psychopathological manifestations, rather than forcing them to classify complex conditions into heterogeneous syndromes (Clarke & Kuhl, 2014). Furthermore, taking a dimensional perspective on diagnosis is likely to foster the inter-relationships between the *DSM-5* and contemporary dimensional models of psychopathology (Cuthbert, 2014; Kotov et al., 2017).

To promote the shift to a dimensional approach to diagnosis, the *DSM-5/DSM-5-TR (APA, 2013, 2022)* incorporates self- (and informant) report dimensional measures of *DSM-5* cross-cutting symptoms to help address the issue of co-occurring symptoms across mental disorders (Clarke & Kuhl, 2014). Moreover, *DSM-5/DSM-5-TR* includes a set of Disorder-Specific Severity Measures. Among the cross-cutting measures, the Patient Reported Outcome Measurement Information System (PROMIS) Emotional Distress Scales (Depression, Anger, and Anxiety) were included in *DSM-5* as Level 2 assessments, whereas the Severity of Dissociative Symptoms-Adult (Brief Dissociative Experiences Scale-Modified; APA, 2013e) was included among the severity measures.

The PROMIS assessment of depression includes the evaluation of negative mood (sadness, guilt), views of self (self- criticism, worthlessness), and social cognition (loneliness, interpersonal alienation), as well as decreased positive affect and engagement (loss of interest, meaning, and purpose). Rather, the PROMIS assessment of anxiety comprises fear (fearfulness, panic), worry, dread, hyperarousal (tension, nervousness, restlessness), and somatic symptoms related to arousal (racing heart, dizziness). Because of the impact of depressive and anxiety symptoms on a wide range of clinical outcomes (e.g., Arbelaez et al., 2023; Castaño et al., 2024; Fonseca et al., 2021; Gómez et al., 2024; Naumova & Naumov, 2022; Tolsa & Malas, 2022; Watts et al., 2021), assessing depressive symptoms is relevant both during the initial phase of assessment (e.g., to tailor treatment), and throughout treatment (e.g., to monitor progresses).

Anger may become a clinically relevant emotion, with elevated levels of anger occurring in a wide range of psychiatric disorders (e.g., Novaco, 2010). Anger involves physiological arousal and preparation for aggression and represents the affective component of aggressive behavior (Buss & Perry, 1992; Manfredi, 2020). Interestingly, the PROMIS assessment of anger includes the evaluation of angry mood (irritability, frustration), negative social cognitions (interpersonal sensitivity, envy, disagreeableness), and efforts to control anger.

Dissociative experiences include depersonalization, derealization, gaps in awareness or memory, and dissociative reexperiencing, and fall in the clinical realm if they are severe enough to cause distress or disrupt functioning (Carlson et al., 2018). Although dissociative symptoms are the defining features of dissociative disorders (APA, 2013), they are associated with different psychopathology conditions (e.g., Benau, 2020; Borroni et al., 2024; Carlson et al., 2018; Černis et al., 2021), representing a relevant treatment target.

DSM-5/*DSM-5-TR* (APA, 2013, 2022) Level 2 measures were thought to be administered at the initial patient interview and/or to monitor treatment progress (APA, 2013); these instruments have some advantages, including being freely available, free of charge, and easy to administer and score (e.g., Clarke & Kuhl, 2014). Notably, they were provided with extended data showing the adequacy of their psychometric properties in terms of reliability (e.g., Pilkonis et al., 2011; Rothmund et al., 2023; Schalet et al., 2016), item calibration (e.g., Cella et al., 2010; Pilkonis et al., 2011), factor structure (e.g., Cella et al., 2010; Pilkonis et al., 2011), and convergent validity (e.g., Pilkonis et al., 2014; Schalet et al., 2016). Moreover, the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales are provided with *T*-scores which allow interpreting measure scores for clinical decision making (APA, 2013, 2022); rather, no normative scores are currently available for the corresponding Italian translation of these instruments (Fossati et al., 2015b, 2015c, 2015d). The *DSM-5* Severity of Dissociation Symptoms Scale was developed as a measure of experiences of amnesia, depersonalization, derealization, absorption, and imaginative involvement (e.g., Bernstein & Putnam, 1986; Carlson & Putnam, 1993). Moreover, been well validated in many studies across a wide range of diagnostic groups (e.g., Bernstein & Putnam, 1986; Carlson & Putnam, 1993; van IJzendoorn & Schuengel, 1996). Notably, the PROMIS Anger, Anxiety, and Depression scales, and the *DSM-5* Severity of Dissociative Symptoms were used in several studies across a broad range of different contexts (e.g., Alawadhi et al., 2023; Clark et al., 2024; Devine et al., 2023; Farid et al., 2024; Schalet et al., 2016; van IJzendoorn & Schuengel, 1996), including structural studies on psychopathology dimensions (e.g., Somma et al., 2023).

Against this background, the aim of the present study is twofold. Firstly, we aimed at examining the basic psychometric properties of the *DSM-5/DSM-5-TR* measures (i.e., item analysis, factor structure and reliability estimates) described above. These set of measures was chosen because they provide systematic assessment of characteristics which are commonly encountered in clinical settings (e.g., Institute of Health Metrics and Evaluation, 2022). Based on previous empirical investigations (e.g., Pilkonis et al., 2011, 2014), we hypothesized to observe adequate reliability for all the measures; moreover, a unidimensional factor or essentially unidimensional (Rodriguez et al., 2016) structure for all *DSM-5/DSM-5-TR* measures (e.g., Teresi et al., 2016) was expected.

Secondly, we aimed at providing clinicians with normative data for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and for the *DSM-5* Severity of Dissociation Symptoms Scale. The availability of normative scores and distribution percentiles represents a fundamental condition to use these measures and both in research context (e.g., participants selection procedure), and clinical practice (e.g., initial assessment).

2. Methods

2.1 Participants

2.1.1 Sample 1

The sample was composed of 1567 Italian community dwelling adult participants. Nine hundred eighty-three participants (62.7%) were male and 584 (37.3%) were female. Participants' mean age was 33.12 years, *SD* = 14.62 years. One thousand forty-eight participants (66.9%) were unmarried, 448 (28.6%) were married, 53 (3.4%) were divorced, and 7 (0.4%) were widow/widower, whereas 11 participants (0.7%) refused to disclose their civil status. One hundred fifteen participants (7.3%) had junior high school degree, 765 (48.8%) had high school degree, 685 (43.7%) had university degree, and 2 participants (0.2%) refused to report their educational level. One thousand four hundred and twenty-eight participants (91.1%) were active community members, 82 (5.2%) participants were unemployed, and 52 (3.3%) were retired; 5 participants (0.4%) refused to disclose their profession.

2.2.2 Sample 2

The sample was composed of 2378 Italian community-dwelling adult participants; 1189 (50.0%) participants were female, 1189 (50.0%) were male. Participants' mean age was 33.42 years, *SD* = 14.38 years. As to participants' educational level, 143 (6.0%) participants reported junior high school degrees, 1084 participants (45.6%) reported high school degrees, 1145 participants (48.1%) reported University degrees; 6 participants (0.3%) did not report their education level. Two thousand fifty-six (90.7%) participants were active community workers, 129 participants

(5.4%) were unemployed, and 85 (3.6%) participants were retired; 8 (0.3%) participants declined to report their profession. Finally, 1530 (64.3%) participants were unmarried, 720 (30.3%) participants were married, 96 (4.0%) participants were divorced, 18 (0.8%) participants were widow/-er, and 14 (0.6%) participants refused to report their civil status.

2.2 Procedures

In the present study, the *DSM-5* measures were administered to participants in their official Italian translations (Fossati et al., 2015a, 2015b, 2015c, 2015d). Participants completed the study online anonymously and volunteered to take part in the study receiving no economic incentive or academic credit for their participation. In order to participate in the present study, participants were required to speak Italian as their first language in order to avoid cultural and lexical bias in questionnaire responses. To be included in the sample, participants had to document that they were of adult age (i.e., 18 years of age or older), and to agree to online written informed consent in which the study was extensively described. All participants were treated in accordance with the Ethical Principles of Psychologists and Code of Conduct. Institutional Review Board was obtained. Ethical Committee Approval:

#TREATEFFPD_2019. Date of approval: May 22nd, 2019.

2.3 Measures

2.3.1 Sample 1 Measure

DSM-5 Level 2 – Anger – Adult (APA, 2013b). The *DSM-5* Level 2-Anger-Adult measure is a 5-item version of the PROMIS Anger Short Form that assesses the pure domain of anger in individuals age 18 and older. Scores range from 5 to 25, with higher scores indicating greater severity of anger (APA, 2013b). The psychometric properties of the *DSM-5* Level 2 Anxiety were extensively investigated (e.g., Pilkonis et al., 2011; Schalet et al., 2016). The *DSM-5* Level 2 Anger measure has been published in its Italian translation (Fossati et al., 2015a), and was used in previous studies (e.g., Somma et al., 2023).

2.3.2 Sample 2 Measures

DSM-5 Level 2 Anxiety– Adult (APA, 2013c). The *DSM-5* Level 2 Anxiety measure is the 7-item PROMIS Anxiety Short Form; it was designed to assess anxiety in adult subjects. Items are rated on a 5-point scale, ranging from 7 to 35; a higher total score indicates greater severity of anxiety (APA, 2013c). The psychometric properties of the *DSM-5* Level 2 Anxiety were extensively investigated (e.g., Pilkonis et al., 2011; Schalet et al., 2016). The *DSM-5* Level 2 Anxiety measure has been published in its Italian translation (Fossati et al., 2015b), and was used in previous studies (e.g., Somma et al., 2023).

DSM-5 Level 2 Depression – Adult (APA, 2013d). The *DSM-5* Level 2 Depression measure is the 8-item PROMIS Depression Short Form that assesses the domain of depression in individuals age 18 and older. Items are rated on a 5-point scale (range: 8-40), and higher scores on the *DSM-5* Level 2 Depression indicate greater severity of depression (APA, 2013d). The psychometric properties of the *DSM-5* Level 2 Anxiety were extensively investigated (e.g., Pilkonis et al., 2011; Schalet et al., 2016). The Italian translation of the *DSM-5* Level 2 Depression has been published (Fossati et al., 2015c), and was used in previous studies (e.g., Somma et al., 2023).

DSM-5 Severity of Dissociative Symptoms (APA, 2013e). The *DSM-5* Severity of Dissociative Symptoms (Brief Dissociative Experiences Scale-Modified) assesses the severity of dissociative experiences in adult individuals. It is an 8-item self-report measure; each item is rated on a 5-point and items are averaged to obtain a total score, ranging from 0 to 4, with higher scores indicating greater severity of dissociative experiences. The reliability and validity of the Dissociative Experiences Scale were extensively tested (e.g., Bernstein & Putnam, 1986; Carlson & Putnam, 1993. The *DSM-5* Severity of Dissociative Symptoms has been published in its Italian translation (Fossati et al., 2015d), and was used in previous studies (e.g., Somma et al., 2023).

2.4 Data analysis

Cronbach' α coefficient was relied upon to assess the scale internal consistency reliability. Polychoric *r* coefficient matrices were computed for item-level factor analyses.

In the present study, we formally assessed the unidimensionality (i.e., the presence of a single latent factor underlying the items of a given scale) of the items of each dimension of the *DSM-5* scales by performing weighted least square mean and variance adjusted (WLSMV) confirmatory factor analysis (CFAs). Considering the multidimensional nature of fit assessment in structural equation models and the need for multiple fit indices (Tanaka, 1993), we used several measures to identify model fit, including the χ^2 goodness-of-fit statistic, Browne and Cudeck's (1993) root mean square error of approximation (RMSEA), the Tucker–Lewis index (TLI), and Bentler's (1990) comparative fit index (CFI). Following Hu and Bentler's (1999) suggestions, TLI and CFI values ≥.95 and RMSEA values close to .06 were considered as indicating good model fit, whereas TLI and CFI values of .90 and higher, and an RMSEA of .08 and lower are indicative of adequate model fit.

In the case of poor fit of CFA models of the measures, we relied on WLSMV CFA bifactor models in which all items were expected to load on the general factor, whereas only item sharing method variance (e.g., item wording and/or distribution artifacts; Markon, 2019) were forced to load also on the orthogonal specific factor. WLSMV bifactor models complement traditional approaches to unidimensionality (Reise et al., 2007). Indeed, in bifactor models, item responses are a function of a general factor and a specific factor representing variance common to a group of items beyond the factor measured by the scale as a whole (Markon, 2019). Bifactor models hypothesizes a general factor on which all items of a given scale are expected to load significantly and substantially, and one or more specific factors that are expected to explain method variance. In our WLSMV ESEM bifactor models, method factors were forced to be orthogonal to the general factor and to each other by using orthogonal bi-geomin rotation. In the case of poor fit also of the WLSMV CFA bifactor model, following Booth and Hughes' (2014) suggestions, we relied on WLSMV exploratory structural equation modeling (ESEM; Marsh et al., 2014) to examine the fit of bifactor models of the corresponding *DSM-5* measure. In order to assess the goodness of fit of bifactor models in WLSMV ESEM analyses, we relied on the same fit indices and cut-off criteria that were used for assessing model fit in CFAs.

Based on Reise and colleagues' (Reise et al., 2013b; Rodriguez et al., 2016) indications, we computed the following statistics to evaluate essential unidimensionality of each *DSM-5* measure in WLSMV CFA/ESEM bifactor models: a) coefficient ω hierarchical (ω_H), which represents the proportion of total reliable score variance attributable to a single general factor (Rodriguez et al., 2016); b) coefficient omega hierarchical specific (ω_{HS}), which represents the proportion of reliable score variance attributable to a specific factor, after removing the reliable variance due to the general factor (Rodriguez et al., 2016); c) explained common variance (ECV), i.e., the percent of common variance explained by the general factor, as well as by each specific factor; d) *H* coefficient, which is a measure of construct reliability; *H* coefficient values >.80 are suggestive of well-defined latent variables (Hancock & Mueller, 2011); e) factor determinacy (FD) index, which assesses the correlation between factor scores and factor, with FD values greater than .90 being suggestive an adequate factor solution (Gorsuch, 1983).

WLSMV CFA and ESEM analyses were carried out using M*plus* 8.10 (Muthén & Muthén, 2017-2023). All other statistical analyses were performed using *R* statistical software (*R* Core Team, 2023).

3. Results

Item analysis results and internal consistency reliability (i.e., Cronbach's α coefficient) values for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and for the *DSM-5* Severity of Dissociation Symptoms Scale are summarized in Table 1. As it can be observed in Table 1, all scales were provided with adequate internal consistency reliability.

Table 1. DSM-5 Level 2 Anger (N = 1567), Anxiety, and Depression Scale and DSM-5 Severity of Dissociative Symptoms (N = 2378) Scale Item Descriptive Statistics and Item-Total Correlations Corrected for Part-Whole Overlap, and Scale Internal Consistency Reliabilities (i.e., Cronbach's α Coefficient Values).

DSM-5 Level 2 Anger Scale [a]	*M*	*SD*	$r_{p\text{-}w}$	*DSM-5* Level 2 Anxiety Scale [b]	*M*	*SD*	$r_{p\text{-}w}$
Item 1	2.22	1.10	.77	Item 1	2.19	1.07	.65
Item 2	2.38	1.01	.80	Item 2	2.82	1.16	.82
Item 3	1.96	1.13	.77	Item 3	3.02	1.04	.78
Item 4	2.01	1.06	.76	Item 4	2.03	1.11	.74
Item 5	2.64	1.02	.75	Item 5	2.87	1.07	.72
Total Score	11.21	4.55		Item 6	2.14	1.07	.66
Cronbach's α (MIC)	.91 (.67)			Item 7	2.42	2.76	.77
				Total Score	17.81	6.17	
				Cronbach's α (MIC)	.91 (.59)		
DSM-5 Level 2 Depression Scale [b]				*DSM-5* Severity of Dissociation Scale [b]			
Item 1	1.99	1.16	.69	Item 1	0.80	0.99	.50
Item 2	1.96	1.15	.78	Item 2	0.28	0.64	.51
Item 3	1.98	1.10	.63	Item 3	0.41	0.70	.47
Item 4	2.76	1.10	.76	Item 4	0.91	1.12	.35
Item 5	1.85	1.15	.78	Item 5	0.24	0.64	.51
Item 6	2.01	1.15	.80	Item 6	0.80	1.04	.32
Item 7	2.34	1.15	.78	Item 7	0.53	0.91	.53
Item 8	1.59	0.96	.73	Item 8	0.55	0.85	.32
Total Score	16.48	7.21		Total Score	0.57	0.52	
Cronbach's α (MIC)	.92 (.60)			Cronbach's α (MIC)	.73 (.27)		

Note. a: N = 1567; b: N = 2378; MIC: Mean inter-item correlation; $r_{p\text{-}w}$: Item-total correlation corrected for part-whole overlap

Goodness-of-fit statistics for item-level WLSMV CFA one-factor and bifactor models, and for item-level WLSMV ESEM bifactor model of the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and of the *DSM-5* Severity of Dissociation Symptoms Scale are listed in Table 2. As summarized in Table 2, all measures were provided with factorial validity, as suggested by goodness-of fit indices values.

Table 2. DSM-5 Level 2 Anger (N = 1567), Anxiety, and Depression Scale, and DSM-5 Severity of Dissociative Symptoms (N = 2378) Scale Item Weighted Least Square Mean and Variance Adjusted Confirmatory Factor Analysis One-Factor and Bifactor Models and Weighted Least Square Mean and Variance Adjusted Exploratory Structural Equation Modeling Bifactor Models: Goodness-of-Fit Statistics.

DSM-5 Level 2 Anger Scale [a]	χ^2 (df)	RMSEA	90% CI	CFI	TLI	SRMSR
WLSMV CFA One-Factor Model	47.71 (5) ***	.074	.056, .094	.998	.996	.009
DSM-5 Level 2 Anxiety Scale [b]						
WLSMV CFA One-Factor Model	751.46 (14) ***	.152	.143, .162	.985	.978	.024
WLSMV CFA Bifactor Model (one general factor and one orthogonal specific factor)	121.56 (9) ***	.073	.061, .084	.997	.993	.012
DSM-5 Level 2 Depression Scale [b]						
WLSMV CFA One-Factor Model	833.55 (20) ***	.131	.123, .138	.982	.975	.031
WLSMV CFA Bifactor Model (one general factor and one orthogonal specific factor)	254.25 (15) ***	.082	.073, .091	.995	.990	.017
WLSMV ESEM Bifactor Model (one general factor and two orthogonal specific factor)	44.42 (7) ***	.047	.035, .061	.999	.997	.005
DSM-5 Severity of Dissociative Symptoms Scale [b]						
WLSMV CFA One-Factor Model	287.44 (20) ***	.075	.067, .083	.951	.931	.039

Note. a: N = 1567; b: N = 2378; WLSMV: Weighted least square mean and variance adjusted; CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; RMSEA: Root mean square error of approximation; 90% CI: 90% confidence interval for RMSEA; CFI: Comparative fit index; TLI: Tucker-Lewis index; SRMSR: Standardized root mean square residual.

*** p <.001

Standardized factor loadings based on WLSMV CFA solutions and orthogonal bi-geomin rotation of. WLSM ESEM bifactor models, ω, ω_H, and ω_{HS} coefficient values, as well as explained common variance, H coefficient and FD index values for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and for the *DSM-5* Severity of Dissociation Symptoms Scale are reported in Table 3. Notably, all measures were provided with adequate reliability according to model-based composite reliability estimates (i.e., omega coefficients).

Table 3. DSM-5 Level 2 Anger (N = 1567), Anxiety, and Depression Scale, and DSM-5 Severity of Dissociative Symptoms (N = 2378) Scale Item Weighted Least Square Mean and Variance Adjusted Confirmatory Factor Analysis One-Factor and Bifactor Models and Weighted Least Square Mean and Variance Adjusted Exploratory Structural Equation Modeling Bifactor Models: Standardized Factor Loadings, McDonald's Omega, Omega Hierarchical and Omega Specific Reliability Coefficients, H Coefficient and FD Coefficients for Best Fitting Models (N = 544).

DSM-5 Level 2 Anger Scale [a,1]	F 1	*DSM-5* Level 2 Anxiety Scale [b,2]	GF	SF 1	SF2
Item 1	.86***	Item 1	.74***	-.28***	--
Item 2	.89***	Item 2	.91***	-.09***	--
Item 3	.88***	Item 3	.87***	-.17***	--
Item 4	.84***	Item 4	.83***	--	--
Item 5	.84***	Item 5	.81***	.38***	--
Explained Common Variance	1.00	Item 6	.72***	--	--
ω	.94	Item 7	.85***	.25***	--
H Coefficient (FD)	.94 (.97)	Explained Common Variance	.94	.06	--
		ω_H / ω_{HS}	.94	.00	--
		H Coefficient (Factor Determinacy Coefficient)	.94 (.98)	.27 (.76)	--
DSM-5 Severity of Dissociative Symptoms Scale [b,1]		*DSM-5* Level 2 Depression Scale [b,3]			
Item 1	.67***	Item 1	.83***	-.01	-.17***
Item 2	.80***	Item 2	.87***	-.06**	.02
Item 3	.63***	Item 3	.73***	.45***	-.01*
Item 4	.45***	Item 4	.81***	.20***	.34***
Item 5	.82***	Item 5	.92***	-.23***	-.04
Item 6	.42***	Item 6	.84***	-.03	.36***
Item 7	.70***	Item 7	.81***	-.02*	.43***
Item 8	.45***	Item 8	.82***	.05*	.24***
Explained Common Variance	1.00	Explained Common Variance	.87	.05	.08
ω	.84	ω_H / ω_{HS}	.93	.00	.03
H Coefficient (Factor Determinacy Coefficient)	.87 (.94)	*H* Coefficient (Factor Determinacy Coefficient)	.95 (.98)	.26 (.76)	.37 (.80)

Note. a: N = 1567; b: N = 2378; 1: Based on weighted least square mean and variance adjusted confirmatory factor analysis one-factor model; 2: Based on weighted least square mean and variance adjusted confirmatory factor analysis bifactor model; 3: Based on orthogonal bi-geomin rotation of the weighted least square mean and variance adjusted exploratory structural equation modeling bifactor model; F: Factor; GF: General factor; SF: Specific factor; --: Parameter fixed at 0/statistic not computed; ω: McDonald's omega coefficient; ωH: Omega hierarchical coefficient; ωHS: Omega hierarchical specific coefficient. *** p <.001; ** p <.01; * p <.05.

Table 4 and Table 5 list the Italian normative data and T-scores for the DSM-5 Level 2 Anger, Anxiety, and Depression Scales, and for the DSM-5 Severity of Dissociation Symptoms Scale.

Table 4. DSM-5 Level 2 Anger Scale (N = 1567) and DSM-5 Level 2 Anxiety Scale (N = 2378) Italian Normative Scores.

DSM-5 Level 2 Anger Scale (N = 1567) and DSM-5 Level 2 Anxiety Scale (N = 2378) Italian Normative Scores.

DSM-5 Level 2 Anger Scale (N = 1567)			*DSM-5* Level 2 Anxiety Scale (N = 2378)		
Raw Score	Cumulative %	T Score	Raw Score	Cumulative %	T Score
5	8.6	33	7	2.7	28
6	15.8	38	8	4.8	32
7	24.3	42	9	7.9	35
8	33.5	44	10	12.7	37
9	42.7	47	11	17.8	40
10	51.7	49	12	23.5	42
11	58.6	51	13	28.4	44
12	64.1	53	14	33.5	45
13	70.1	54	15	39.4	47
14	75.7	56	16	44.4	48
15	81.3	58	17	50.1	49
16	85.1	60	18	56.2	51
17	88.8	61	19	62.1	52
18	91.5	63	20	66.6	54
19	94.2	65	21	71.2	55
20	97.1	67	22	75.9	56
21	98.6	70	23	79.8	58
22	99.1	73	24	83.6	59
23	99.2	74	25	87.8	61
24	99.4	74	26	91.0	62
25	100.0	77	27	93.4	64
			28	95.8	66
			29	97.0	68
			30	97.4	69
			31	98.1	70
			32	98.7	71
			33	99.2	73
			34	99.8	76
			35	100.0	81

Table 5. DSM-5 Level 2 Depression Scale and DSM-5 Severity of Dissociative Symptoms Scale Italian Normative Scores (N = 2378).

DSM-5 Level 2 Depression Scale (*N* = 2378)			*DSM-5* Severity of Dissociative Symptoms Scale (*N* = 2378)		
Raw Score	Cumulative %	*T* Score	Raw Score	Cumulative %	*T* Score
8	8.9	33	0.00	12.6	35
9	17.2	39	0.13	23.5	41
10	25.7	42	0.25	36.3	45
11	32.6	45	0.38	48.9	48
12	39.0	46	0.50	59.8	51
13	44.2	48	0.63	69.3	54
14	48.5	49	0.75	77.1	56
15	53.2	50	0.88	82.3	58
16	57.9	51	1.00	86.4	60
17	62.5	53	1.13	89.4	62
18	66.5	54	1.25	91.5	63
19	69.5	55	1.38	93.2	64
20	73.3	56	1.50	94.9	66
21	75.9	57	1.63	95.9	67
22	78.6	57	1.75	96.7	68
23	81.7	58	1.88	97.1	69
24	85.1	60	2.00	98.1	70
25	87.0	61	2.13	98.8	72
26	88.9	62	2.25	99.0	73
27	90.9	63	2.38	99.2	74
28	92.4	64	2.50	99.4	74
29	93.5	65	2.63	99.5	75
30	94.5	66	2.75	99.6	76
31	95.8	67	2.88	99.7	77
32	96.8	68	3.00	99.8	78
33	97.5	69	3.13	99.8	79
34	98.1	70	3.25	99.9	80
35	98.6	71	3.50	99.9	81
36	99.1	73	3.63	99.9	82
37	99.4	74	4.00	100.0	85
38	99.6	76			
39	99.9	78			
40	100.0	82			

As it can be observed in Table 4 and Table 5, for ease of interpretation, we provided both raw scores and *T* scores, which could help practitioners to use test results in clinical decision-making about both assessment and treatment.

4. Discussion

As a whole, our findings seemed to support the hypothesis that the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and the *DSM-5* Severity of Dissociative Symptoms Scale were provided with adequate basic psychometric properties. All item-total *r* values corrected for part-whole overlap were adequate; notwithstanding the limited length of the four *DSM-5* scales that were considered in the present study, Cronbach's α coefficient values were greater than .70 for all scales, suggesting adequate reliability of their respective total scores. Not surprisingly, mean inter-item *r* values were suggestive of adequate internal consistency for the four *DSM-5* measures that were administered to our participants (Clark & Watson, 1995). It may be observed that average inter-item *r* values that were observed in our study for the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales exceeded the upper level of the interval for adequate internal consistency (mean inter item *r* range: .15, .50; Clark & Watson, 1995). As Clark and Watson (1995) thoughtfully pointed out, when this finding occurs, it is likely to be related to redundancy in item content and/or wording; this method artifact is known to result in spurious extra factors condensing shared method variance (Nunnally & Bernstein, 1994; Reise et al., 2013a).

WLSMV CFA results supported the adequacy of the unidimensional latent structure of the *DSM-5* Level 2 Anger Scale and *DSM-5* Severity of Dissociative Symptoms Scale items, respectively. Except for the goodness-of-fit χ^2 value, all other fit index values supported the tenability of the one-factor model of the scale items (Hu & Bentler, 1999). All standardized factor loadings for the respective WLSMV CFA solutions were large, positive, and significant; both factor scale scores were adequately reliable (i.e., ω coefficient values >.70; McDonald, 1999), whereas *H* coefficient and *FD* index values suggested that the corresponding latent variable were well-defined, even in terms of factor scores, for both *DSM-5* Level 2 Anger Scale and *DSM-5* Severity of Dissociative Symptoms Scale.

Although the CFI, TLI, and SRMSR values suggested acceptable model fit (Hu & Bentler, 1999), both goodness-of-fit χ^2 and RMSEA values did not support the adequacy of the one-factor model of the *DSM-5* Level 2 Anxiety and Depression Scale items in WLSMV CFAs. Rather, the WLSMV CFA bifactor model of the *DSM-5* Level 2 Anxiety Scale items in which all items were assigned to the general factor, and a sub-set of items sharing method variance were assigned also to an orthogonal specific factor seemed to fit the data adequately. In the case of the *DSM-5* Level 2 Depression Scale items, none of the WLSMV CFA models seemed to adequately reproduce the data; rather, acceptable fit (except for the goodness-of-fit χ^2 value) was observed for the WLSMV ESEM bifactor model with one general factor comprising all scale items, and two orthogonal specific factors, purportedly condensing only spurious variance.

In the case of both bifactor models, item standardized factor loadings on the respective general factors were all substantial, positive, and highly significant (*DSM-5* Level 2 Anxiety Scale item median standardized factor loading value = .83, min. = .72, max. = .91, all *p*s <.001; *DSM-5* Level 2 Depression Scale item median standardized factor loading value =.83, min. = .73, max. = .92, all *p*s <.001). At the opposite, the item standardized factor loadings for the specific factor were in the trivial-to-moderate range, with opposite relationships with the same latent variable. Consistent with this finding, the absolute majority of the explained common variance of the *DSM-5* Level 2 Anxiety and Depression Scale items was condensed by the respective general factors. In our bifactor models, *H* coefficient and *FD* index values suggested that only the corresponding general factors were well-defined latent variables, even in terms of factor scores; whereas specific factors should not be relied upon in further structural equation modeling (Rodriguez et al., 2016). In line with this factor analytic evidence, ω_H and ω_{HS} values clearly indicated that only the *DSM-5* Level 2 Anxiety and Depression Scale item general factors were provided with adequate reliability, whereas the corresponding specific factors condensed a trivial (if any) amount of reliable score variance.

Although strictly unidimensional models of the *DSM-5* Level 2 Anxiety and Depression Scale items did not seem to fit adequately the data, our bifactor model results strongly supported the hypothesis that both measures were essentially unidimensional in nature; in other terms, no further reliable source of information seemed to exist in both scale once their corresponding total scores were taken into account (Rodriguez et al., 2016).

Providing clinicians with normative data on these measures complemented our findings on their basic psychometric properties. A substantial body of evidence strongly support the dimensional latent structure of the majority of psychopathological manifestations, including, anger, anxiety, depression, and dissociation (Clarke & Kuhl, 2014; Haslam et al., 2020). Accordingly, the availability of normative scores and distribution percentiles may represent a necessary condition to rely on these measures in routine clinical practice.

5. Strengths and limitations

Of course, our results should be considered in the light of several limitations. Although the current study included a large number of participants, our samples represented convenient study groups rather than samples representative of the Italian population. Moreover, our participants were adult volunteers who received no incentive for taking part in the research. Although differences may exist in the motivation between paid and nonpaid research participants (Gerstein et al., 2004), research data offer conflicting findings as to using incentives for participants lead to improved commitment or to biased findings (e.g., Grady et al., 2005).

Although it could be argued that in our study we did not assess convergent and discriminant validity of the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and the *DSM-5* Severity of Dissociative Symptoms Scale, it should be observed that the DSM-5 Level 2 measures used in the present investigation are included in the Patient Reported Outcomes Measurement Information System (PROMIS; www.nihpromis.org), developed as a part of the U.S. National Institutes of Health roadmap initiative to measure self-reported health for clinical research and practice. Similarly, the *DSM-5* Severity of Dissociative Symptoms Scale Brief represents the short form of the Dissociative Experiences Scale (Carlson et al., 2010), which was directly modified by C. Dalenberg and E. Carlson (see American Psychiatric Association, 2013e). Thus, previous investigations (e.g., Pilkonis et al., 2014; Schalet et al., 2016) documented the convergent validity of all measures used in the present study. Despite a previous study called into question the validity of the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales (Tarescavage et al., 2021), it should be observed that these results were based on the Minnesota Multiphasic Personality Inventory–2–Restructured Form (Ben-Porath & Tellegen, 2008) only, which was not primarily developed as a measure of *DSM-5* symptoms. Finally, it should be observed that the cross-sectional nature of our findings suggests caution in using the *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and the *DSM-5* Severity of Dissociative Symptoms Scale in longitudinal clinical applications, such as symptom monitoring during treatment; future studies on this topic are needed.

6. Conclusion

Even keeping these limitations in mind, we think that providing clinicians and researchers with normative data and basic psychometric properties of *DSM-5* measures could be useful in order to allow for dimensional assessment of psychopathology (e.g., Kotov et al., 2021). In turn, this may facilitate the adoption of *DSM-5* Level 2 Anger, Anxiety, and Depression Scales, and the *DSM-5* Severity of Dissociative Symptoms Scale in routine clinical assessment.

Ethical approval

All participants were treated in accordance with the Ethical Principles of Psychologists and Code of Conduct. Institutional Review Board was obtained. Ethical Committee Approval:

#TREATEFFPD_2019. Date of approval: May 22nd, 2019.

Informed Consent Statement

All involved subjects were informed about the anonymous nature of data and gave their informed consent.

Data Availability Statement

Data are available upon request, by sending an email to the corresponding author. Data cannot be made publicly available, because this was not explicitly approved by the participants at the moment of assessment.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any potential conflict of interest.

Authors' Contribution

A.S. and A.F contributed to the conceptualization of the article. A.D.C., L.B., C.A., G.G., and V.M. collected the data. A.S. and A.F. performed statistical analyses. All authors have written, have read, and approved the final article.

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