Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Initial Validation of the German Translation of the Vulnerable Attachment Style Questionnaire (VASQ-D): Factor Structure and Psychometric Properties

Nora M. Laskowski

nora.laskowski@rub.de

LWL-University Hospital, Ruhr- University Bochum

Gerrit Brandt

LWL-University Hospital, Ruhr- University Bochum

Marietta Lieb

LWL-University Hospital, Ruhr- University Bochum

Georgios Paslakis

LWL-University Hospital, Ruhr- University Bochum

Research Article

Keywords: VASQ, VASQ-D, Vulnerable Attachment Style Questionnaire, Vulnerable Attachment, Attachment Style, Psychometric Properties, Psychometric Validation, Factor Structure, Construct Validity, German Adaptation

Posted Date: June 19th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-9912573/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Abstract

Background

The Vulnerable Attachment Style Questionnaire (VASQ) assesses attachment-related vulnerability and risk for psychopathology. However, no validated German version is currently available. This study aimed to translate and psychometrically evaluate a German adaptation of the VASQ (VASQ-D).

Methods

Data from *N* = 1,468 adults recruited via Prolific were analyzed. Participants were eligible if they were ≥ 18 years old, resided in Germany, and provided informed consent. The VASQ was translated using established forward–backward translation procedures. Psychometric evaluation included item analyses, internal consistency, exploratory and confirmatory factor analyses, and assessments of construct validity through associations with psychological distress, eating pathology, and sociocultural appearance pressures.

Results

Item analyses supported the final coding of the VASQ-D and led to the exclusion of Item 21 because of consistently poor psychometric performance. Internal consistency of the final scale was good (α = .78). Exploratory factor analysis supported a two-factor structure corresponding to insecurity and proximity-seeking, with good-to-excellent reliability for insecurity (α = .86) and good reliability for proximity-seeking (α = .71). Confirmatory factor analyses indicated limited absolute model fit but slightly better relative fit for the adapted model excluding item 21 (Comparative Fit Index = .71, Tucker–Lewis Index = .68, Root Mean Square Error of Approximation = .10). Construct validity was supported by positive associations with psychological distress (r = .61), sociocultural appearance pressures (r = .41), and eating pathology (r = .35). Smaller associations with traditional masculinity/femininity and autistic traits provided preliminary evidence for discriminant validity.

Conclusions

The findings provide initial support for the reliability and validity of the VASQ-D and broadly replicate the original two-factor structure. While some item-level inconsistencies and limited model fit warrant further investigation, the VASQ-D appears to be a useful instrument for assessing vulnerable attachment styles in German-speaking populations.

Background

Attachment is a central construct in psychosocial development. It refers to the early emotional bond between an infant and their caregiver, through which characteristic patterns of relating to others, commonly described as secure, anxious/ambivalent, or avoidant, are formed. These early experiences are thought to shape so-called internal working models, that is, relatively stable cognitive–affective representations of the self and others, which guide expectations, emotional responses, and interpersonal behavior across the lifespan [1–4].

Secure attachment in adulthood is characterized by comfort with closeness and trust in others [3, 5] and has been associated with higher life satisfaction [6], psychological well-being [7], and adaptive emotion regulation [8]. It supports the development of a coherent and stable sense of identity, promoting resilience, self-confidence, and healthy interpersonal functioning [9]. In contrast, insecure attachment styles are characterized by difficulties in trusting others, avoidance of intimacy, or excessive dependency, and are consistently linked to a broad range of adverse outcomes, including depression [10], anxiety [11], eating disorders [12], emotion dysregulation [8, 11], and personality pathology [13]. Insecure attachment has also been associated with psychological distress, heightened sensitivity to sociocultural influences and impairments in interpersonal functioning [9, 12, 14].

Given the central role of attachment in mental health, valid and reliable assessment tools are essential for both research and clinical practice. The *Vulnerable Attachment Style Questionnaire* (VASQ [15]) is a widely used instrument designed to assess vulnerability in attachment-related functioning. The VASQ consists of 22 items and comprises two subscales: *insecurity* and *proximity-seeking*. The *insecurity* subscale reflects anxiety, mistrust, and difficulties with closeness, whereas *proximity-seeking* reflects a tendency to seek closeness, which (when elevated) may indicate dependency and separation anxiety. Previous research suggests that these dimensions can be further differentiated into more specific subcomponents [16]. Importantly, the VASQ not only captures the severity of insecure attachment but also identifies individuals at increased risk for psychopathology, particularly depressive symptoms [15, 16], highlighting its clinical relevance. The original English version demonstrates good psychometric properties and internal consistency ($\alpha = .82$ for *insecurity*, $\alpha = .67$ for *proximity-seeking*) and evidence for construct validity through associations with established attachment measures (e.g., *Attachment Style Interview*; *Relationship Questionnaire* [5, 17]) and mental health indicators (e.g., depression; social support) [15]. Another study has further demonstrated associations with eating pathology and perceived stress [16].

Although there are instruments for assessing attachment available in German, most of them focus on attachment styles within close/romantic relationships. For example, the *Adult Attachment Scale* [18] assesses attachment-related attitudes in close relationships, whereas the *Experiences in Close Relationships – Revised* [19] assesses attachment-related cognitions and expectations in romantic relationships. The *Relationship Scales Questionnaire* [20] provides a continuous assessment of attachment patterns in close relationships based on the four-category model of adult attachment, including secure, dismissing, preoccupied, and fearful styles [5]. More comprehensive self-report measures, such as the *Attachment Style Questionnaire* [21] assess multiple dimensions of adult

attachment, providing a profile of attachment characteristics and interpersonal functioning. In contrast, the VASQ uniquely combines a dimensional assessment of attachment-related vulnerability with an explicit focus on clinically relevant risk for psychopathology [15]. To our knowledge, no German self-report measure currently provides an equivalent combination of dimensional attachment-related vulnerability assessment and clinically oriented risk identification. According to current research, the VASQ has so far only been translated into German in a master's thesis and validated in an adolescent sample [22], while a comprehensive evaluation in a broader population conducted according to established guidelines is lacking.

Therefore, this study aimed to translate and psychometrically evaluate a German adaptation of the VASQ following established cross-cultural translation procedures [23, 24]. Our study examined the questionnaire's factor structure, internal consistency, and construct validity in order to evaluate its equivalence to the original English version and its applicability in a German-speaking population. Construct validity was examined via associations with related psychological outcomes such as psychological distress, eating pathology, and sociocultural appearance pressures. By providing a psychometrically evaluated German version of the VASQ, this study aims to extend the cross-cultural applicability of the instrument and provide researchers and clinicians with a reliable tool for assessing vulnerable attachment styles in German-speaking populations.

Methods

Procedure and Participants

The present study is based on a secondary analysis of data collected as part of a larger cross-sectional study on muscle dysmorphia in Germany. Subsets of the sample have been used in previous analyses addressing distinct research questions [25, 26]. Participants were recruited online via Prolific and were eligible if they were at least 18 years old, resided in Germany, and provided informed consent prior to participation.

Translation Process

Permission to translate the VASQ from English into German was granted by the author of the original English version [15]. The translation procedure followed established guidelines [24]. First, two independent forward translations were prepared by native German speakers with formal linguistic training and advanced proficiency in English. The translators were blinded to each other's work. The two German versions were subsequently compared and reconciled in a documented written process. The reconciled German version was then back-translated into English by two independent native English speakers who were blinded to the original questionnaire. Agreement between the back-translated and original versions was high, with only two items (items 6 and 19) requiring further refinement and additional rounds of forward and back translation until consensus was achieved. No cultural adaptations

were considered necessary. All reconciliation steps were documented. Finally, the translated version was reviewed and finalized by an expert committee comprising a physician, a psychologist, and a public health expert, all trained in psychological methodology.

Measures

Vulnerable Attachment Style Questionnaire (VASQ)

The VASQ [15] is a 22-item self-report instrument assessing adult attachment-related behaviors, emotions, and attitudes. Items are rated on a 5-point Likert scale ranging from “strongly agree” to “strongly disagree.” For the present study, the German-translated version (VASQ-D) was administered. Response options were presented verbally, and numeric coding was applied internally during data collection. In line with the original scoring procedure, item responses were recoded where necessary so that higher scores reflect higher levels of vulnerable attachment. The instrument yields a total score as well as two subscale scores reflecting *insecurity* and *proximity-seeking*. The full German version of the VASQ-D is provided in Supplementary Table 1.

Kessler Psychological Distress Scale (K-10)

Psychological distress was assessed using the *Kessler Psychological Distress Scale* (K10 [27, 28]), a brief measure of nonspecific psychological distress. Mean scores were computed, with higher values indicating greater levels of distress.

Eating Disorder Examination Questionnaire (EDE-Q)

The *Eating Disorder Examination Questionnaire* (EDE-Q [29, 30]) is a self-report measure of eating disorder psychopathology. Due to limited evidence for stable replication of its original factor structure [31–33], only the global score was used in the present study.

Sociocultural Attitudes Towards Appearance Questionnaire-4R (SATAQ-4R)

The *Sociocultural Attitudes Towards Appearance Questionnaire-4R* (SATAQ-4R [34, 35]) is an internationally established instrument assessing the internalization of societal beauty ideals as well as the perceived pressure to conform to these standards. It is available in two gender-specific forms (28 items for men, 31 items for women), both comprising a total score and seven subscales covering internalization (*thinness*, *muscularity*, *general attractiveness*) and sociocultural pressures (*family*, *peers*, *significant others*, *media*).

Traditional Masculinity–Femininity Scale (TMF)

Traditional masculinity and femininity were assessed using the *Traditional Masculinity–Femininity Scale* (TMF [36]), a brief self-report measure assessing self-ascribed gender-role identification. The scale comprises separate masculinity and femininity dimensions, each assessed with six items. Mean scores were computed separately for masculinity and femininity, with higher scores indicating stronger identification with the respective traditional gender-role dimension.

Autism Spectrum Quotient — Short Version (AQ-K)

Autistic traits were assessed using the German short version of the Autism Spectrum Quotient (AQ-K [37]) a self-report screening instrument for autistic traits in adults derived from the original Autism Spectrum Quotient. The AQ-K comprises 33 items selected from the original version based on psychometric properties and item discrimination. For the present study, a total mean score across items was computed, with higher scores indicating higher levels of autistic traits.

Statistical Analyses

Statistical analyses were conducted in Python (v3.12 [38]) in a Jupyter notebook environment [39]. Data were imported using pyreadstat (v1.2.7 [40]), and data preparation was performed using pandas (v3.0.1 [41]). Numerical computations were conducted using NumPy (v1.26.4 [42]) and SciPy (v1.11.4 [43]). Exploratory factor analyses (EFA) were carried out using the factor_analyzer package (v0.5.1 [44]) and confirmatory factor analyses (CFA) were conducted using semopy (v2.3.11 [45]). Statistical significance was evaluated using a two-sided significance level of Cronbach's alpha (α) = .05. Missing values in correlational analyses were handled using pairwise complete observations. The study was preregistered on AsPredicted (#235,975) prior to data collection; however, no formal analysis plan was preregistered. As this study was based on secondary data, sample size was determined by data availability.

Item Analyses

Item-level analyses were conducted prior to factor analysis to evaluate the distributional properties and internal consistency of the translated instrument. Descriptive statistics and inter-item correlations were examined to identify potential anomalies and redundancies (see Supplementary Tables 2–4). Internal consistency was evaluated using α and McDonald's omega (ω) as complementary indicators of reliability. Corrected item–total correlations and α if item deleted were inspected to evaluate item performance (see Supplementary Table 5). To ensure appropriate scoring, reverse-coded items were evaluated based on their conceptual content and expected direction of association with the total score. Alternative coding specifications were systematically compared with respect to internal consistency estimates and corrected item–total correlations. The final coding scheme was determined prior to factor analysis.

Items were excluded only if they showed consistently poor psychometric performance across multiple criteria, including very low or negative corrected item–total correlations, low communalities, and weak

factor loadings, in combination with conceptual considerations. Factor-analytic indicators were considered as supportive rather than primary criteria for item exclusion. In addition, leave-one-item-out analyses (LOOA) were conducted to evaluate the impact of individual items on internal consistency and the stability of the factor structure. Items were retained unless their removal resulted in a meaningful improvement in reliability or revealed substantial psychometric deficiencies. Because the analysis plan was not preregistered, item exclusion decisions were treated as exploratory and based on converging psychometric and conceptual evidence.

Factor Analysis

The suitability of the data for factor analysis was evaluated using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. KMO values ≥ .60 were considered acceptable. A significant Bartlett's test ($p < .05$) indicated that the correlation matrix was suitable for factor analysis. The number of factors was initially informed by parallel analysis, comparing observed eigenvalues with those obtained from random data (see Supplementary Table 6). Given that factor retention decisions should not rely on a single criterion, additional EFAs were conducted for competing factor solutions. These solutions were systematically compared with respect to interpretability, item distribution across factors, and internal consistency. EFAs were conducted using minimum residual extraction with oblique promax rotation. Items were assigned to factors based on their primary loadings (≥ .40), while cross-loadings were required to remain below .30 for clear factor assignment.

To provide a preliminary model-based evaluation of the EFA-derived structure, CFA models were estimated in the same sample. Because no independent validation sample was available, CFA results should be interpreted as exploratory rather than confirmatory. Two competing models were specified and compared: (1) an empirical two-factor model derived from the EFA results and (2) the original two-factor structure proposed by Bifulco et al. [15], comprising the dimensions insecurity and proximity-seeking. CFAs were estimated using maximum likelihood estimation. Model fit was evaluated using the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). Following commonly accepted guidelines, CFI and TLI values ≥ .90 were considered indicative of acceptable fit and values ≥ .95 of good fit, while RMSEA values ≤ .08 indicated acceptable fit and values ≤ .06 good fit. Model comparisons were based on fit indices as well as information criteria (AIC, BIC), with lower AIC and BIC values indicating better relative model fit.

Construct Validity

Construct validity of the VASQ-D was examined by assessing its associations with theoretically relevant psychological constructs reflecting domains of vulnerability linked to insecure attachment [9, 12, 14, 16]. It was hypothesized that higher VASQ-D scores would be positively associated with psychological distress (K10 [28]), eating pathology (EDE-Q [29]), and sociocultural appearance pressures (SATAQ-4R [35]). In addition, divergent validity was explored using theoretically less closely related constructs, namely traditional masculinity/femininity (TMF [36]) and autistic traits (AQ-K [37]). Scale scores for all constructs were computed as mean scores across items. Pearson product–moment correlations were

calculated between the VASQ-D total score and its subscales and the external measures using pairwise complete observations.

Results

Sample characteristics

A total of *N* = 1,468 participants were included in the study. Of these, 706 (48.1%) identified as women, 739 (50.3%) as men, 21 (1.4%) as nonbinary, queer, or transgender, and 2 (0.1%) did not report their gender identity. The mean age was 30.95 years (SD = 9.80; range = 18–75). For further details see [25, 26].

Item Coding and Preliminary Item Analyses

Item-level coding was evaluated before the final global scale-score recoding. Initial analyses followed the original scoring procedure, with items 14 and 15 reverse coded. Internal consistency was good (α = .74), and corrected item–total correlations indicated potential inconsistencies, particularly for items 1 and 21 (see Supplementary Table 4). In addition, several negative inter-item correlations involving item 21 were observed (see Supplementary Table 2). Inspection of the item wording indicated that item 1 was conceptually oriented opposite to the vulnerable attachment total score in the German version, supporting its reverse coding.

Descriptive item statistics indicated no notable distributional irregularities (see Supplementary Table 3), and inter-item correlations were generally low to moderate, suggesting that the items captured related but non-redundant aspects of the construct. Reversing item 1 in addition to Items 14 and 15 increased internal consistency (α = .76) and resulted in a positive corrected item–total correlation for item 1. Exploratory evaluation of an alternative coding specification including item 21 yielded only a slight increase in internal consistency (α = .77), but introduced new inconsistencies, including a negative corrected item–total correlation for item 14 (see Supplementary Table 4). Based on these findings, the coding scheme with items 1, 14, and 15 reversed was retained. Item 21 was excluded from further analyses due to its consistently poor psychometric performance, resulting in a slight improvement in internal consistency (α = .78, ω = .73).

Subsequent item-level and factor-analytic diagnostics further identified items 11 and 14 as potentially problematic, showing consistently low corrected item–total correlations, low communalities, and weak factor loadings. However, LOOA indicated that their removal resulted in only minor improvements in internal consistency and did not substantially alter the overall factor structure (see Supplementary Table 5). Therefore, these items were retained for subsequent analyses.

Exploratory Factor Analysis (EFA)

The KMO measure indicated good sampling adequacy (.86), and Bartlett's test of sphericity was significant, $\chi^2(210) = 8925.36$, $p < .001$, supporting the suitability of the data for factor analysis. Parallel

analysis initially suggested a four-factor solution, as the first four observed eigenvalues exceeded those obtained from random data (see Supplementary Table 6). Given that factor retention decisions should not rely on a single criterion, additional EFAs were conducted to compare two-, three-, and four-factor solutions based on the final item set (excluding item 21). The two-factor solution showed a stable and interpretable structure, with balanced factor sizes and acceptable to good internal consistency for both factors (*insecurity*: α = .86, ω = .86; *proximity-seeking*: α = .71, ω = .71). Together, the two factors accounted for 31.7% of the total variance, with the *insecurity* factor explaining 20.8% and the *proximity-seeking* factor explaining 10.9%. The correlation between the two factors was negligible (r = − .05), indicating relative independence between the dimensions. In contrast, the three-factor solution resulted in at least one factor with lower internal consistency ($\alpha \approx .61$), whereas the four-factor solution yielded smaller and psychometrically weaker factors, including a two-item factor with low reliability ($\alpha \approx .57$). Although parallel analysis suggested four factors, the additional factors were small, less reliable, and less theoretically interpretable. Therefore, based on considerations of interpretability, factor size, internal consistency, and theoretical coherence with the original VASQ structure, the two-factor solution was retained for further analyses (see Table 1).

Table 1
Exploratory factor loadings and communalities of the German Vulnerable Attachment Style Questionnaire (VASQ-D)

Item	Factor Loading		
	Factor 1: *Insecurity*	Factor 2: *Proximity-Seeking*	Communality (h^2)
VASQ-D 1	.335	−.132	.130
VASQ-D 2	−.041	.474	.226
VASQ-D 3	.674	.191	.491
VASQ-D 4	−.090	.492	.250
VASQ-D 5	.711	−.095	.515
VASQ-D 6	.164	.364	.159
VASQ-D 7	−.128	.478	.245
VASQ-D 8	.629	−.103	.406
VASQ-D 9	.563	−.058	.320
VASQ-D 10	.704	.233	.550
VASQ-D 11	−.075	.281	.084
VASQ-D 12	.404	.257	.229
VASQ-D 13	.111	.599	.371
VASQ-D 14	−.195	.397	.196
VASQ-D 15	.010	.501	.251
VASQ-D 16	.295	.555	.395
VASQ-D 17	.488	−.033	.239
VASQ-D 18	.729	−.059	.535
VASQ-D 19	.494	−.248	.306
VASQ-D 20	.565	.192	.356
VASQ-D 22	.627	−.123	.408

Note. Factor loadings are based on exploratory factor analysis using minimum residual estimation with promax rotation. Factor loadings ≥ .40 are typically considered salient. Item 21 was excluded due to poor psychometric performance prior to factor analysis.

Confirmatory Factor Analysis (CFA)

CFAs were conducted to compare the original VASQ two-factor structure [15] with the adapted two-factor VASQ-D model excluding Item 21. The original model showed limited fit to the data, $\chi^2(208) = 3224.73$, $p < .001$, CFI = .68, TLI = .65, RMSEA = .10. The adapted model showed slightly better but still limited fit, $\chi^2(188) = 2716.99$, $p < .001$, CFI = .71, TLI = .68, RMSEA = .10. AIC and BIC were lower for the adapted model than for the original model, indicating better relative fit. However, given that conventional fit criteria were not met, these findings should not be interpreted as confirmatory support for the adapted two-factor structure. Rather, they suggest that the adapted model may be preferable to the original specification, while further validation in an independent sample is required.

The pattern was broadly interpretable in relation to the original *insecurity* and *proximity-seeking* dimensions [15], although several items showed comparatively weak standardized factor loadings below .40 in both models, including items 1, 6, 11, 12, and 14. Thus, the findings suggest partial conceptual correspondence with the original VASQ dimensions, while also indicating that the factor structure of the VASQ-D requires further evaluation. Full standardized factor loadings for both CFA models are provided in Supplementary Table 7.

Construct Validity

The VASQ-D total score showed a strong positive correlation with psychological distress (K10; $r = .61$, $p < .001$), and moderate positive correlations with sociocultural appearance pressures (SATAQ-4R; $r = .41$, $p < .001$) and eating pathology (EDE-Q; $r = .35$, $p < .001$). At the subscale level, the insecurity factor demonstrated a similar pattern, showing strong associations with psychological distress ($r = .55$, $p < .001$) and moderate associations with eating pathology ($r = .33$, $p < .001$) and sociocultural appearance pressures ($r = .30$, $p < .001$). In contrast, the proximity-seeking factor showed weaker but significant associations with psychological distress ($r = .27$, $p < .001$), sociocultural appearance pressures ($r = .27$, $p < .001$), and eating pathology ($r = .12$, $p < .001$). Divergent validity analyses showed generally smaller associations with theoretically less closely related constructs. Associations with traditional masculinity/femininity were small ($|r|s \leq .19$), whereas associations with autistic traits ranged from small to moderate ($|r|s \leq .26$).

Full correlation results, including 95% confidence intervals, are provided in Supplementary Table 8. These findings provide preliminary evidence of convergent and discriminant validity, although the absence of another established attachment measure limits conclusions regarding attachment-specific validity.

Discussion

Main Findings

The present study aimed to translate and validate the German version of the VASQ-D in a German-speaking sample. We examined its factor structure, internal consistency, and construct validity through associations with related psychological outcomes, including psychological distress, eating pathology, and sociocultural appearance pressures. Overall, the findings support the applicability of the VASQ-D in a

German context. The factor structure and reliability pattern were broadly comparable to those of the original English version by Bifulco et al. [15], supporting preliminary evidence for conceptual correspondence while also indicating some item-level deviations that may reflect linguistic or cultural differences. Specifically, the present findings broadly supported the original two-factor structure corresponding to *insecurity* and *proximity-seeking*, and internal consistency for both factors was comparable to or slightly higher than in the original version (*insecurity*: α = .86 vs. .82; *proximity-seeking*: α = .71 vs. .67 [15]). This convergence supports the conceptual stability of the VASQ across language versions.

At the same time, CFA indicated only modest model fit for both the original [15] and our adapted model, with fit indices below conventional cut-off criteria, suggesting only partial structural support in the present sample. Notably, the adapted model excluding item 21 showed slightly better fit and lower AIC and BIC values than the original item configuration [15], supporting the exclusion of Item 21 from the final analyzed German version. Inspection of item-level performance further indicated that several items did not load clearly on their intended factors (e.g., items 1, 6, 11, 12, and 14), suggesting weaker item–factor associations. While items 14 and 15 were reverse-coded in accordance with the original scoring procedure, item 1 additionally required reverse coding in the present study, indicating a deviation from the original scoring logic. Furthermore, item 21 was excluded due to consistently poor psychometric performance. These findings suggest that although the underlying two-factor structure remains largely intact, some item formulations may function differently in the German context, potentially due to translation effects, semantic nuances, or cultural differences in the expression of attachment-related attitudes.

Although parallel analysis suggested four factors, the additional factors were small, less reliable, and less theoretically interpretable. Therefore, the two-factor solution was retained as a parsimonious and theoretically aligned solution. This finding differs from the more differentiated four-factor structure reported by Kupeli et al. [16], who identified subdimensions within *insecurity* and *proximity-seeking* in a large English-speaking community sample. This discrepancy may reflect differences in sample composition, language adaptation, or factor retention strategies. In the present study, the more parsimonious two-factor solution showed better interpretability, more balanced factor composition, and stronger reliability, supporting retention of the broader original dimensions rather than their subdivision.

Construct validity was supported by the observed associations with theoretically related psychological constructs. Higher levels of vulnerable attachment were associated with greater psychological distress, eating pathology, and sociocultural appearance pressures, consistent with previous theoretical and empirical work on insecure attachment and psychopathology [9, 12, 14, 16]. Importantly, the *insecurity* dimension showed stronger and more consistent associations across all constructs than *proximity-seeking*. This pattern aligns with both English validation studies, in which *insecurity* was more strongly linked to depressive outcomes, eating pathology and perceived stress, whereas *proximity-seeking* showed weaker or non-significant associations [15, 16]. Conceptually, *insecurity* reflects maladaptive attachment features such as mistrust, emotional instability, and avoidance, which may be more directly

linked to general psychopathology. In contrast, *proximity-seeking* may represent a more normative interpersonal tendency that becomes clinically relevant primarily in interaction with high insecurity [15]. In addition, the small to moderate associations with theoretically less closely related constructs, such as traditional masculinity/femininity and autistic traits, provide preliminary support for the discriminant validity of the VASQ-D.

Limitations and Strengths

Several limitations of the present study should be considered. First, the cross-sectional design precludes conclusions regarding causality or temporal stability of attachment-related vulnerability. Second, data were collected exclusively via self-report measures, which may be subject to biases such as social desirability, recall bias, or response tendencies. Third, the use of an online convenience sample recruited via Prolific may limit the generalizability of the findings. Although monetary compensation ensured sufficient participation, it may also have influenced response behavior or sampling characteristics. A further methodological limitation is that EFA and CFA were conducted within the same sample, which limits the independence of model validation and may have inflated the apparent stability of the identified factor structure. Future studies should aim to replicate the factor structure in independent and clinical samples. Moreover, the absence of an established attachment-specific comparator measure limited the assessment of convergent and discriminant validity. In addition, compared to the original English version [15], the present findings indicate some differences in item functioning and only modest model fit for the two-factor structure, which may limit the robustness and cross-cultural generalizability of the factor structure. Despite these limitations, an important strength of the study is the relatively large and heterogeneous community sample, which enabled a comprehensive psychometric evaluation of the VASQ-D. The study provides the first systematically validated German adaptation of the VASQ in an adult population and extends the availability of attachment assessment tools by offering an instrument that combines dimensional severity assessment with clinically relevant risk identification.

Conclusions

The present findings support the overall applicability of the German version of the VASQ and provide initial evidence for its reliability and construct validity in a German-speaking population. The findings broadly supported a two-factor structure corresponding to the original dimensions [15] and showed comparable psychometric properties, supporting partial structural correspondence across language versions. At the same time, modest model fit and item-level deviations indicate that some aspects of the instrument may benefit from further refinement. The VASQ-D represents a useful tool for the assessment of vulnerable attachment styles in both research and clinical settings and may contribute to a better understanding of attachment-related vulnerabilities and their role in psychological distress and maladaptive behavioral patterns. Future research should further examine item functioning, measurement invariance across cultural contexts, and predictive validity in both community and clinical samples.

Declarations

Ethics Approval and Consent to Participate

The study was reviewed and approved by the Ethics Committee of the Faculty of Medicine at Ruhr-University Bochum, East Westphalia Campus (AZ 2025-137), and was conducted in accordance with the Declaration of Helsinki.

Consent for Publication

Not applicable

Availability of Data and Materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Authors' contributions

Nora M. Laskowski, conceptualization, methodology, formal analysis, project administration, software, writing – original draft, writing – review & editing; Gerrit Brandt, conceptualization, methodology, project administration, writing – original draft, writing – review & editing; Marietta Lieb, writing – original draft, writing – review & editing; Georgios Paslakis, resources, supervision, validation, writing – review & editing.

Acknowledgements

Not applicable

References

1. Ainsworth MD. Attachments across the life span. Bull N Y Acad Med. 1985;61:792–812.
2. Bowlby J. The Making and Breaking of Affectional Bonds. British Journal of Psychiatry. 1977;130:201–10. https://doi.org/10.1192/bjp.130.3.201.
3. Hazan C, Shaver P. Romantic love conceptualized as an attachment process. J Pers Soc Psychol. 1987;52:511–24. https://doi.org/10.1037/0022-3514.52.3.511.

4. Salter Ainsworth MD, Blehar MC, Waters E, Wall SN. Patterns of Attachment. A Psychological Study of the Strange Situation. New York: Taylor & Francis; 2015.
5. Bartholomew K, Horowitz LM. Attachment styles among young adults: A test of a four-category model. J Pers Soc Psychol. 1991;61:226–44. https://doi.org/10.1037/0022-3514.61.2.226.
6. Blake JA, Thomas HJ, Pelecanos AM, Najman JM, Scott JG. Attachment in Young Adults and Life Satisfaction at Age 30: A Birth Cohort Study. Appl Res Qual Life. 2024;19:1549–68. https://doi.org/10.1007/s11482-024-10297-x.
7. Sagone E, Commodari E, Indiana ML, La Rosa VL. Exploring the Association between Attachment Style, Psychological Well-Being, and Relationship Status in Young Adults and Adults—A Cross-Sectional Study. Eur J Investig Health Psychol Educ. 2023;13:525–39. https://doi.org/10.3390/ejihpe13030040.
8. Eilert DW, Buchheim A. Attachment-Related Differences in Emotion Regulation in Adults: A Systematic Review on Attachment Representations. Brain Sci. 2023;13:884. https://doi.org/10.3390/brainsci13060884.
9. Marković E, Lazović N, Cvetković K. Attachment and Forming of Identity. SCIENCE International Journal. 2024;3:159–64. https://doi.org/10.35120/sciencej0303159m.
10. Fang F, Wang J. The relationship between attachment and depression among college students: the mediating role of perfectionism. Front Psychol. 2024;15. https://doi.org/10.3389/fpsyg.2024.1352094.
11. Nielsen SKK, Lønfeldt N, Wolitzky-Taylor KB, Hageman I, Vangkilde S, Daniel SIF. Adult attachment style and anxiety – The mediating role of emotion regulation. J Affect Disord. 2017;218:253–9. https://doi.org/10.1016/j.jad.2017.04.047.
12. Nasrallah M, Abi-Habib R, Tohme P. Disturbances in eating behavior and body image: The role of attachment, media internalization, and self-objectification. Appetite. 2025;204:107766. https://doi.org/10.1016/j.appet.2024.107766.
13. Beeney JE, Wright AGC, Stepp SD, Hallquist MN, Lazarus SA, Beeney JRS, et al. Disorganized attachment and personality functioning in adults: A latent class analysis. Personality Disorders: Theory, Research, and Treatment. 2017;8:206–16. https://doi.org/10.1037/per0000184.
14. Li C-L, Wu P-C. Insecure Attachment and Psychological Distress in Early Adolescence: Loneliness as a Mediator. J Cogn Psychother. 2026;40:7–23. https://doi.org/10.1891/JCP-2025-0001.
15. Bifulco A, Mahon J, Kwon JH, Moran PM, Jacobs C. The Vulnerable Attachment Style Questionnaire (VASQ): An interview-based measure of attachment styles that predict depressive disorder. Psychol Med. 2003;33:1099–110. https://doi.org/10.1017/S0033291703008237.
16. Kupeli N, Norton S, Chilcot J, Schmidt UH, Campbell IC, Troop NA. A Confirmatory Factor Analysis and Validation of the Vulnerable Attachment Style Questionnaire. J Psychopathol Behav Assess. 2015;37:153–63. https://doi.org/10.1007/s10862-014-9432-3.
17. Bifulco A, Moran PM, Ball C, Bernazzani O. Adult attachment style. I: Its relationship to clinical depression. Soc Psychiatry Psychiatr Epidemiol. 2002;37:50–9. https://doi.org/10.1007/s127-002-

8215-0.

18. Schmidt S, Strauß B, Höger D, Brähler E. Die Adult Attachment Scale (AAS) - Teststatistische Prüfung und Normierung der deutschen Version. PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie. 2004;54 9/10:375–82. https://doi.org/10.1055/s-2003-815000.
19. Ehrenthal JC, Zimmermann J, Brenk-Franz K, Dinger U, Schauenburg H, Brähler E, et al. Evaluation of a short version of the Experiences in Close Relationships-Revised questionnaire (ECR-RD8): results from a representative German sample. BMC Psychol. 2021;9:140. https://doi.org/10.1186/s40359-021-00637-z.
20. Steffanowski A, Oppl M, Meyerberg J, Schmidt J, Wittmann WW, Nübling R. Psychometrische Überprüfung einer deutschsprachigen Version des Relationship Scales Questionnaire (RSQ). In: Störungsspezifische Therapieansätze - Konzepte und Ergebnisse. Gießen: Psychosozial; 2001. p. 320–42.
21. Feeney JA, Noller P, Hanrahan M. Assessing adult attachment. Attachment in adults: Clinical and developmental perspectives. 1994;:128–52.
22. Kecojevic K. Unsichere Bindung in der Adoleszenz. 2024.
23. Gana K, Broc G, Boudouda NE, Calcagni N, Ben Youssef S. The ITC guidelines for translating and adapting tests (second edition). Pratiques Psychologiques. 2021;27:175–200. https://doi.org/10.1016/j.prps.2020.06.005.
24. Tsang S, Royse C, Terkawi A. Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. Saudi J Anaesth. 2017;11:80. https://doi.org/10.4103/sja.SJA_203_17.
25. Lieb M, Zaiser C, Laskowski NM, Halbeisen G, Paslakis G. The Impact of Peer and Media Pressure on Muscle Dysmorphia for Men and Women in the General German Population is Mediated by the Internalization of Muscularity Ideals. submitted. 2026.
26. Zaiser C, Laskowski NM, Halbeisen G, Lieb M, Paslakis G. Estimating probable muscle dysmorphia prevalence in Germany: weighting and gender-specific cutoffs in a mixed adult sample. submitted. 2026.
27. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand S-LT, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychol Med. 2002;32:959–76. https://doi.org/10.1017/S0033291702006074.
28. Giesinger J, Rumpold MagG, Schüßler G. Die K10-Screening-Skala für unspezifischen psychischen Distress. Psychosom Konsiliarpsychiatr. 2008;2:104–11. https://doi.org/10.1007/s11800-008-0100-x.
29. Hilbert A, Tuschen-Caffier B, Karwautz A, Niederhofer H, Munsch S. Eating Disorder Examination-Questionnaire. Diagnostica. 2007;53:144–54. https://doi.org/10.1026/0012-1924.53.3.144.
30. Fairburn CG, Beglin SJ. Eating Disorder Examination Questionnaire (EDE-Q). APA PsycTests; 1994. https://doi.org/10.1037/t03974-000.

31. Laskowski NM, Halbeisen G, Braks K, Huber TJ, Paslakis G. Factor structure of the Eating Disorder Examination-Questionnaire (EDE-Q) in adult men with eating disorders. J Eat Disord. 2023;11. https://doi.org/10.1186/s40337-023-00757-4.
32. Laskowski NM, Halbeisen G, Braks K, Huber TJ, Paslakis G. Exploratory graph analysis (EGA) of the dimensional structure of the eating disorder examination-questionnaire (EDE-Q) in women with eating disorders. J Psychiatr Res. 2023;163:254–61. https://doi.org/10.1016/j.jpsychires.2023.05.063.
33. Jenkins PE, Rienecke RD. Structural validity of the Eating Disorder Examination—Questionnaire: A systematic review. International Journal of Eating Disorders. 2022;55:1012–30. https://doi.org/10.1002/eat.23721.
34. Schaefer LM, Harriger JA, Heinberg LJ, Soderberg T, Kevin Thompson J. Development and validation of the sociocultural attitudes towards appearance questionnaire-4-revised (SATAQ-4R). International Journal of Eating Disorders. 2017;50:104–17. https://doi.org/10.1002/eat.22590.
35. Flechsig F-J, Schönhals K, Quittkat HL, Vocks S. Validierung der geschlechtsspezifischen deutschsprachigen Versionen des Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R). PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie. 2025;75:475–81. https://doi.org/10.1055/a-2648-6459.
36. Kachel S, Steffens MC, Niedlich C. Traditional masculinity and femininity: Validation of a new scale assessing gender roles. Front Psychol. 2016;7 JUL. https://doi.org/10.3389/fpsyg.2016.00956.
37. Freitag CM, Retz-Junginger P, Retz W, Seitz C, Palmason H, Meyer J, et al. Evaluation der deutschen Version des Autismus-Spektrum-Quotienten (AQ) - die Kurzversion AQ-k. Z Klin Psychol Psychother. 2007;36:280–9. https://doi.org/10.1026/1616-3443.36.4.280.
38. Python Software Foundation. Python. 2024.
39. Jupyter Team. Jupyter. 2015.
40. Fajardo O. Pyreadstat. 2018. https://doi.org/https://doi.org/10.5281/zenodo.6612282.
41. The pandas development team. pandas-dev/pandas: Pandas. 2020. https://doi.org/10.5281/zenodo.3509134.
42. Harris CR, Millman KJ, van der Walt SJ, Gommers R, Virtanen P, Cournapeau D, et al. Array programming with NumPy. Nature. 2020;585:357–62. https://doi.org/10.1038/s41586-020-2649-2.
43. Virtanen P, Gommers R, Oliphant TE, Haberland M, Reddy T, Cournapeau D, et al. SciPy 1.0: fundamental algorithms for scientific computing in Python. Nat Methods. 2020;17:261–72. https://doi.org/10.1038/s41592-019-0686-2.
44. Biggs J, Madnani N. factor_analyzer. 2022.
45. Igolkina AA, Meshcheryakov G. semopy: A Python Package for Structural Equation Modeling. Struct Equ Modeling. 2020;27:952–63. https://doi.org/10.1080/10705511.2019.1704289.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- VASQDSupplement03.06.2026.docx