

Validation of the Three-Factor Reflective Functioning Questionnaire for Youth in a Chinese Adolescent Sample

Wen Chen^{1,2}, Yun Li², Haitham Jahrami^{3,4}, Weiyan Wang⁵, Wei Zheng², Yuxia Huang¹, Nicola Luigi Bragazzi^{6,7}, Weijia Gao¹

¹Department of Child Psychology, Children's Hospital, Zhejiang University School of Medicine, National Clinical Research Center for Child Health, National Children's Regional Medical Center, Hangzhou, People's Republic of China; ²Department of Psychiatry, Xiamen Xianyue Hospital, Xiamen, People's Republic of China; ³College of Medicine and Medical Sciences, Arabian Gulf University, Manama, Bahrain; ⁴Ministry of Health, Manama, Bahrain; ⁵Affiliated Mental Health Center & Hangzhou Seventh People's Hospital, Zhejiang University School of Medicine, Hangzhou, People's Republic of China; ⁶Laboratory for Industrial and Applied Mathematics, Department of Mathematics and Statistics, York University, Toronto, Canada; ⁷Human Nutrition Unit (HNU), Department of Food and Drugs, Medical School, University of Parma, Parma, Italy

Correspondence: Weijia Gao, Department of Child Psychology, Children's Hospital, Zhejiang University School of Medicine, National Clinical Research Center for Child Health, National Children's Regional Medical Center, Hangzhou, Zhejiang Province, People's Republic of China, Email 6314017@zju.edu.cn; Nicola Luigi Bragazzi Human Nutrition Unit (HNU), Department of Food and Drugs, Medical School, University of Parma, Parma, Italy, Email robertobragazzi@gmail.com

Purpose: This study focused on the validation of the Three-Factor Reflective Functioning Questionnaire for Youth (RFQY) within a sample of Chinese adolescents.

Patients and Methods: All the items of the RFQY were translated into Chinese language through the process of translation and back translation. A total of 532 adolescents aged between 12–20 years completed the Chinese version of RFQY, McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD), Basic Empathy Scale (BES), and the 20-item Toronto Alexithymia Scale (TAS-20).

Results: Twenty items meeting psychometric standards were retained in the Chinese version of the RFQY. The indices for confirmatory factor analysis, including χ^2/df (2.354), SRMR (0.053), GFI (0.930), CFI (0.921), TLI (0.910), and RMSEA (0.050), all conformed to the requirements of psychometrics. The Cronbach's alpha coefficients for the three factors, "uncertainty/confusion", "interest/curiosity", and "excessive certainty", were 0.820, 0.673, and 0.839, respectively, with test-retest reliability scores of 0.751, 0.643, and 0.764. A significant positive correlation was found between uncertainty/confusion and symptoms of borderline personality disorder (BPD), particularly in adolescents with high BPD traits. Excessive certainty was positively correlated with unstable interpersonal relationships, while the interest/curiosity factor shows no significant correlation with BPD symptoms. The uncertainty/confusion factor demonstrates a complex relationship with empathy, correlating positively with affective empathy but negatively with cognitive empathy. The uncertainty/confusion factor shows a significant positive correlation with alexithymia, while the factor of excessive certainty demonstrates the opposite effect. Additionally, a significant negative correlation exists between the interest/curiosity factor and the externally oriented thinking.

Conclusion: This study validates the Chinese version of the Reflective Functioning Questionnaire for Youth (RFQY), demonstrating its reliability and validity in assessing reflective functioning among Chinese adolescents. This enhances the understanding of reflective functioning and its role in adolescent mental health.

Keywords: mentalizing, adolescence, psychometric validation, borderline personality disorder

Introduction

Mentalizing, also known as reflective functioning (RF), is defined as the ability to understand the mental states in self and others, encompassing emotions, intentions, beliefs, and desires.¹ This multidimensional construct, crucial for navigating social interactions, encompasses both cognitive and emotional aspects related to the self and others, and manifests in both

implicit and explicit forms.² Impairments in RF have been linked to a range of mental health issues, including depression, eating disorders, and particularly borderline personality disorder (BPD).^{3–6}

Historically, most studies on RF have focused on adult populations.⁷ However, adolescence, a period marked by significant biological and socio-cultural changes, presents unique challenges and opportunities in the development of mentalizing. Recent research underscores the importance of RF in adolescent self and identity development and its connection to various psychopathological conditions, highlighting the need for effective measurement tools for this age group.^{6,8,9}

Reflective Functioning Scale (RFS), an interview-based instrument, and the Reflective Functioning Questionnaire (RFQ) are two primary tools used to assess RF.^{10,11} Despite their effectiveness, these tools are time-consuming and not always suitable for adolescent populations. To address this, Sharp and collaborators¹² adapted a modified version of the RFQ, termed the “Reflective Functioning Questionnaire for Youth” (RFQY). The RFQY consists of 46 items and employs a 6-point Likert scale to assess the degree of agreement or disagreement with statements related to reflective functioning. Similar to the adult RFQ, the RFQY comprises two subscales. However, these subscales do not differ substantially in the content of reflective functioning (eg, self vs other) but rather employ two distinct scoring methods. Scale A contains 23 items, where the optimal reflective functioning is scored at the mid-point of the Likert scale. Extreme responses indicate poor reflective functioning, with “Strongly Disagree” or “Strongly Agree” assigned a score of 2, “Disagree” or “Agree” given a score of 4, and “Disagree Somewhat” or “Agree Somewhat” assigned a score of 6. For example, an item on Scale A, such as “I often get confused about what I am feeling”, would indicate poor reflective functioning if responded to with “Strongly Agree” or “Strongly Disagree”, as optimal reflective functioning involves some uncertainty regarding one’s mental content. Scale B also consists of 23 items, and each item is rated on an ordinal response scale from low to high. For instance, an item like “I realize that I can sometimes misunderstand my best friends’ reactions”, when responded to with “Strongly Agree”, would indicate optimal reflective functioning and receive a score of 6. Ultimately, the total score is obtained by averaging the scores of Scale A and Scale B. RFQY underwent its initial validation in a cohort of 146 hospitalized adolescents. The preliminary validation of RFQY-46 demonstrated commendable construct validity and reliability through the utilization of its total score.

In order to comprehend the internal structure of RFQY, Duval and team¹³ unified the scoring system. They streamlined the original 46-item RFQY questionnaire into a 25-item format through exploratory factor analysis, identifying three key factors: uncertainty/confusion about mental states, interest/curiosity about mental states, and excessive certainty about others’ mental states. This revised 25-item version of the RFQY, the RFQY-25, has exhibited robust psychometric properties. To improve the efficiency of measurement, Sharp et al¹⁴ refined the RFQY Scale B into a more concise version, the RFQY-5, using item response theory. The RFQY-5 exhibited improved reliability and discrimination compared to its predecessor, yet it still maintains a unidimensional structure. Afterwards, Lund et al¹⁵ validated a 13-item version of RFQY in Denmark. Through exploratory factor analysis, the authors reduced the original 46 items to 13, categorizing them into two factors: Uncertainty about mental states and Certainty about mental states. The RFQY-13 demonstrated strong psychometric properties, including good model fit, internal consistency, and significant correlations with BPD features.

While RFQY-5 and RFQY-13 have shown promise in measuring RF in adolescents, their unidimensional structure and focus on uncertain and certain about mental states may not fully encompass the complexity of RF. The three-factor RFQY-25 does not have the aforementioned limitations, but its psychometric properties in Chinese adolescents have not yet been clarified. Therefore, the purpose of this study is to validate the three factors of the RFQY in a sample of Chinese adolescents.

Materials and Methods

Participants

In this study, a total of 532 adolescents aged 12–20 years (Mean=15.50, SD=2.21) participated. With the Ethics Committee’s approval from Xiamen Xianyue Hospital, these participants were recruited from two high schools in Xiamen City, Fujian Province, China. The sample comprised 53% females (n = 282) and 47% males (n = 250), with 56.4% (n = 300) hailing from urban areas and 43.6% (n = 232) from rural areas. [Table 1](#) presents the detailed

Table 1 Characteristics of the Full Sample (N=532)

Variables	Mean (SD) or n (%)	Minimum	Maximum
Age	15.50	(2.21)	12
Gender			
Male	250	(47)	
Female	282	(53)	
Region			
Urban	300	(56.4)	
Rural	232	(43.6)	
RFQY-C			
Uncertainty/Confusion	3.53	(0.88)	1
Interest/Curiosity	4.19	(0.79)	1
Excessive certainty	3.38	(0.91)	1

Abbreviations: SD, standard deviation; n, number.

characteristics of the entire sample. For the retest conducted two weeks later, 196 adolescents (mean age = 15.90, SD = 1.79; 53.6% females and 46.4% males) were randomly selected.

Ethical Statements

This research received approval from the Ethics Committee at Xiamen Xianyue Hospital (Approval No. 2018-KY-009). Adhering to the Declaration of Helsinki guidelines, all procedures were conducted ethically. Informed consent was secured from each participant, and for those under 18, consent was obtained from their parents or legal guardians.

Measures

Chinese Version of Reflective Functioning Questionnaire for Youth (RFQY-C)

The Chinese version of the Reflective Functioning Questionnaire for Youth (RFQY-C) initially had 46 items, rated on a 6-point Likert scale. Through the efforts of Duval et al, it was reduced to 25 items across three factors: uncertainty/confusion about mental states, interest/curiosity in mental states, and excessive certainty about others' mental states, showing good psychometric properties. Building upon this foundation, this research focuses on the validation of the 25-item Reflective Functioning Questionnaire for Youth (RFQY) within the context of Chinese adolescents. For translation, a bilingual psychology graduate first translated it into Chinese. Then, a bilingual English professional unfamiliar with the RFQY back-translated it. After the developers' revision for consistency, the final Chinese version was established.

McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)

The MSI-BPD is a self-report measure developed especially to evaluate the presence of BPD traits.¹⁶ It consists of 10 items (yes/no), with each item correlating to one of the BPD diagnostic criteria, except for the transient psychotic feature, which is represented by two separate items. Following the criteria set by Zhang et al¹⁷ a self-reported MSI-BPD score of 2 or less was categorized as low BPD trait, while a score of 6 or more indicated high BPD traits. Its Chinese version shows good internal consistency ($\alpha = 0.726$) and validity.¹⁸ A four-factor model, mirroring the original, was confirmed in Chinese college students, with factors like emotional dysregulation, impulsivity, cognitive disturbance and unstable interpersonal relationship. In this study, the MSI-BPD had a Cronbach's alpha of 0.831.

Basic Empathy Scale (BES)

The BES contains 20 items, divided into two key dimensions: affective empathy and cognitive empathy. Each item is rated on a 5-point scale from 0 (Strongly Disagree) to 4 (Strongly Agree). The scores from both components are combined to form a total BES score, which can range from 0 to 80. The Chinese version of the BES showed good internal consistency ($\alpha = 0.77$) and concurrent validity in a sample of adolescents ranging in age from 12 to 20 years.¹⁹ In this study, BES had a Cronbach's alpha of 0.759.

The 20-Item Toronto Alexithymia Scale (TAS-20)

The TAS-20 is a widely used, self-administered questionnaire developed to measure alexithymia. It contains 20 items and consists of three subscales: difficulty identifying feelings (DIF), difficulty describing feelings (DDF) and externally oriented thinking (EOT). The Chinese version of the TAS-20 has demonstrated good reliability and validity.²⁰ In this study, TAS-20 had a Cronbach's alpha of 0.813.

Statistical Analysis

Statistical analysis was performed using AMOS (version 23.0) and SPSS (version 22.0). Item analysis for the RFQY-C was carried out by calculating item-total correlation coefficients. Item analysis for the RFQY-C involved calculating item-total correlation coefficients to determine the degree to which each item correlates with the overall test score, aiming to identify items that do not contribute effectively to the scale. Items are typically considered effective if their correlation coefficients are 0.3 or higher, indicating a significant positive relationship with the overall scale. Coefficients below this threshold may suggest that an item does not align well with the other items and could be considered for revision or removal to enhance the scale's coherence and reliability. Construct validity was assessed through exploratory factor analysis (EFA), where factors were extracted using principal component analysis (PCA) and varimax rotation to clarify the factor structure. The suitability of conducting EFA was determined by the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (values > 0.6 are acceptable, with values closer to 1 being preferable) and Bartlett's test of sphericity (p-value < 0.05 indicating that the correlations between items are sufficiently large for EFA). Factors were retained based on the eigenvalue greater than 1 rule and an examination of the scree plot. Items with factor loadings below 0.4 or those cross-loading on two factors were considered for removal, as they may not contribute meaningfully to any single factor, thereby enhancing the interpretability and reliability of the factor structure. Confirmatory factor analysis (CFA) followed, specifically testing the three-factor structure identified by Duval et al using common fit indices. These indices included the Chi-square/df ratio (χ^2/df , values <5 indicating acceptable fit), Standardized Root Mean Square Residual (SRMR, values <0.08 suggesting good fit), Goodness of Fit Index (GFI, values >0.9 denoting good fit), Comparative Fit Index (CFI, values >0.90 indicating good fit), Tucker-Lewis Index (TLI, values >0.90 also suggesting good fit), and Root Mean Square Error of Approximation (RMSEA, values <0.08 reflecting good fit). The internal consistency of the RFQY-C was evaluated using Cronbach's alpha. Additionally, Spearman correlations were applied to assess retest reliability and criterion validity. Independent sample *t*-tests compared differences in age and RFQY-C scores between adolescent groups with low and high BPD traits, and chi-square tests assessed differences in gender and region between these groups. All statistical evaluations of the RFQY-C's psychometric properties were conducted at an alpha level of 0.05.

Results

Item Analysis

We performed an item analysis by calculating item-total correlation coefficients. Table 2 reveals significant correlations with acceptable coefficients ($r \geq 0.3$) between each item and its corresponding subscale, with the exception of items 8 and 14. Consequently, these two items were excluded from further analysis.

Exploratory Factor Analysis (EFA)

To explore the structure of the remaining 23 items, we conducted exploratory factor analysis (EFA) using principal axis factoring and varimax rotation. The EFA met the necessary criteria, with a Kaiser-Meyer-Olkin measure of 0.861 and Bartlett's test significance below 0.001. Initially, four factors with eigenvalues over 1 emerged, accounting for 21.22%, 15.32%, 7.61%, and 4.91% of the variance, respectively. However, Cattell's scree plot indicated a more fitting three-factor solution, explaining a total of 44.15% of the RFQY-C variance, aligning with the original 25-item RFQY's three-factor model structure. Items 2 and 11 were discarded due to their failure to load significantly (>0.40) on any factor, and item 29 was also dropped for cross-loading on two factors. A subsequent EFA on the refined 20-item set revealed a clear three-factor structure accounting for 47.41% of the total variance. The detailed factor loadings for these 20 items are presented in Table 3. The defined factors and their contributions were as follows: Factor 1, labeled "Uncertainty/Confusion regarding mental states", comprised nine items with loadings between 0.497 and 0.736, explaining

Table 2 The Correlation Analysis of Each Item and the Total Score of Subscales

Item no	r	Item no	r	Item no	r
8	-0.069	2	0.503**	16	0.798**
9	0.563**	11	0.566**	25	0.759**
10	0.678**	14	-0.189**	30	0.658**
17	0.591**	19	0.523**	37	0.753**
22	0.662**	20	0.502**	40	0.796**
23	0.598**	34	0.631**	46	0.701**
27	0.591**	41	0.575**		
29	0.503**	45	0.651**		
35	0.606**				
36	0.662**				
38	0.685**				

Notes: **Correlation is significant at the 0.01 level (two tailed).

Table 3 RFQY-C Factor Loadings After Rotation

Factors and Items	F1	F2	F3	Communalities
F1				
21	0.736	-0.042	-0.030	0.545
19	0.712	-0.069	0.043	0.514
4	0.689	0.144	-0.058	0.499
8	0.646	-0.058	0.006	0.420
11	0.636	0.141	-0.022	0.425
18	0.623	-0.024	0.146	0.410
12	0.606	0.012	0.108	0.378
14	0.574	0.103	-0.021	0.340
3	0.497	0.251	-0.001	0.310
F2				
24	0.085	0.773	0.111	0.617
17	0.102	0.673	0.216	0.510
10	-0.062	0.609	0.007	0.375
9	-0.011	0.564	0.247	0.379
23	0.265	0.513	0.214	0.379
F3				

(Continued)

Table 3 (Continued).

Factors and Items	F1	F2	F3	Communalities
22	0.054	0.114	0.797	0.652
13	-0.011	0.035	0.783	0.615
7	-0.053	0.167	0.774	0.629
20	0.065	0.205	0.720	0.565
16	0.087	0.047	0.649	0.431
25	-0.022	0.289	0.637	0.490

22.166% of the variance. Factor 2, “Interest/Curiosity about mental processes”, included five items with loadings between 0.513 and 0.773, contributing to 8.022% of the variance. Factor 3, “Excessive Certainty regarding others’ mental states”, consisted of six items with loadings between 0.637 and 0.797, accounting for 17.221% of the variance. Additionally, the Cronbach’s alpha values were $\alpha = 0.820$ for Factor 1, $\alpha = 0.673$ for Factor 2, and $\alpha = 0.839$ for Factor 3. Retest reliability coefficients were $r = 0.751$ ($p < 0.01$) for Factor 1, $r = 0.643$ ($p < 0.01$) for Factor 2, and $r = 0.764$ ($p < 0.01$) for Factor 3. Ultimately, the RFQY-C was refined to a 20-item scale with a three-factor structure. Furthermore, Cronbach’s alpha values were $\alpha = 0.820$ for factor 1, $\alpha = 0.673$ for factor 2, $\alpha = 0.839$ for factor 3, and retest coefficient were $r = 0.751$ ($p < 0.01$) for factor 1, $r = 0.643$ ($p < 0.01$) for factor 2, $r = 0.764$ for factor 3 ($p < 0.01$). Finally, RFQY-C retained 20 items with a three-factor structure.

Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis was performed to test the structural validity of RFQY-C. The results found that three factors were a good model fit ($\chi^2/df=2.354$, SRMR=0.053, GFI=0.930, CFI=0.921, and TLI=0.910, RMSEA=0.050).

Criterion Validity

The development of borderline personality disorder is considered to be the inhibition of reflective functioning in response to early abuse. Consequently, the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) was employed to assess symptoms of BPD and chosen as an external criterion to examine the criterion validity of the RFQY-C.

Significant positive correlations were found between the uncertainty/confusion factor and the four dimensions of MSI-BPD ($r = 0.472, 0.506, 0.361, \text{ and } 0.298$, respectively). However, no significant relationships were found between the interest/curiosity factor and any of the MSI-BPD scales. The excessive certainty factor was significantly positively correlated with the MSI-BPD unstable interpersonal relationships scale ($r = 0.110$). These correlations are detailed in [Table 4](#).

Among the 532 adolescents studied, 82 were categorized as having high BPD traits, and 311 were identified with low BPD traits. The analysis revealed no significant differences in age, gender, or region between the two groups ($t = 0.814$, $P = 0.060$; $\chi^2 = 1.103$, $P > 0.05$; $\chi^2 = 3.425$, $P > 0.05$). Notably, adolescents in the high BPD trait group (Mean = 4.30, SD = 0.66) scored significantly higher on the uncertainty/confusion factor compared to those in the low BPD trait group (Mean = 3.11, SD = 0.79) ($t = -10.540$, $P < 0.01$). No significant differences were found regarding the interest/curiosity or excessive certainty factors.

Convergent Validity

Due to the broad nature of RF concept, it inevitably has conceptual overlaps with other psychological constructs such as empathy and alexithymia.²¹ To evaluate convergent validity, Spearman correlations were calculated between the RFQY-C scores and those of the BES and TAS-20. As shown in [Table 4](#), the uncertainty/confusion factor showed a significant positive correlation with the affective empathy ($r = 0.238$) and a negative correlation with the cognitive empathy ($r = -0.164$). Furthermore, the interest/curiosity factor exhibited significant positive correlations with both the affective

Table 4 Spearman Correlations Among the RFQY-C, MSI-BPD, BES and TAS-20

	RFQY-C Uncertainty/ Confusion	RFQY-C Interest/ Curiosity	RFQY-C Excessive certainty
MSI-BPD emotional dysregulation	0.472**	0.003	-0.040
MSI-BPD cognitive disturbance	0.506**	0.083	-0.005
MSI-BPD Impulsivity	0.361**	0.078	0.060
MSI-BPD Unstable interpersonal relationship	0.298**	0.053	0.110*
BES affective empathy	0.238**	0.247**	0.045
BES cognitive empathy	-0.164**	0.426**	0.393**
TAS-20 DIF	0.612**	-0.015	-0.111**
TAS-20 DDF	0.508**	-0.034	-0.160**
TAS-20 EOT	0.252**	-0.263**	-0.145**

Notes: *Correlation is significant at the 0.05 level (two tailed); **Correlation is significant at the 0.01 level (two tailed).

Abbreviations: RFQY-C, the Chinese version of Reflective Functioning Questionnaire for Youths; MSI-BPD, McLean Screening Instrument for Borderline Personality Disorder; BES, Basic Empathy Scale; TAS-20, the 20-item Toronto Alexithymia Scale; DIF, Difficulties Identifying Feelings; DDF, Difficulties Describing Feelings; EOT, Externally Orienting Thinking.

empathy ($r = 0.247$) and cognitive empathy ($r = 0.426$). The excessive certainty factor correlated positively with cognitive empathy ($r = 0.393$).

As for the associations between the RFQY-C factors and alexithymia, we found that the uncertainty/confusion factor was significantly positively correlated with the alexithymia dimensions (0.508, 0.361, and 0.252, respectively). The interest/curiosity factor displayed a significant negative correlation with the externally oriented thinking scale ($r = -0.263$). Similarly, the excessive certainty factor was negatively correlated with the alexithymia dimensions ($r = -0.111$, -0.160 , and -0.145 , respectively).

Discussion

The findings of the present trans-cultural validation of the RFQY demonstrated sufficient construct validity, demonstrating its psychometric soundness.

The item analysis revealed significant and acceptable correlations for each item with their respective subscales, except for items 8 and 14, which were subsequently removed. Further analysis through EFA led to the exclusion of items 2, 11, and 29, either due to their failure to load adequately on any factor or because of cross-loading issues. This process revealed a three-factor structure: “uncertainty/confusion regarding mental states”, “interest/curiosity about mental processes”, and “excessive certainty regarding mental states of others”. CFA indicated that three-factor model fit the data well, in agreement with the findings from the original scale’s study. Finally, 20 items were retained in the formal RFQY-C. The Cronbach’s alpha coefficients for the three subscales are 0.820, 0.673, and 0.839, respectively.

In line with the findings of Duval et al,¹³ the Cronbach’s alpha coefficient for the “Interest/Curiosity” factor is relatively lower compared to the other two factors. However, it still meets psychometric standards, as an acceptable level of internal consistency for subscales is generally considered to be above 0.5. Regarding test-retest reliability, the three subscales were measured at 0.751, 0.643, and 0.764, respectively, demonstrating a substantial level of consistency over time.

Using borderline symptoms as an external benchmark to assess the criterion validity of the RFQY-C, we found a significant positive correlation between the uncertainty/confusion factor and the four dimensions of MSI-BPD. Further analysis, categorizing adolescents into groups with low and high BPD trait, revealed that those in the high BPD trait group exhibited a notably higher score in the uncertainty/confusion factor compared to the group with low BPD trait. This aligns with Duval et al findings of a strong positive correlation between uncertainty/confusion and BPD traits,

consistent with current scholarly research.^{13,15,22} Martin-Gagnon and team also discovered that uncertainty/confusion about mental states acts as a partial mediator between Childhood Emotional Abuse (CEA) and BPD traits, suggesting it as a potential key deficit in adolescent BPD.⁹ These findings emphasize the importance of early intervention and targeted therapeutic strategies that address these specific mentalizing difficulties. By improving mental state understanding and reducing uncertainty/confusion, it may be possible to mitigate some of the impacts of BPD traits and enhance overall mental well-being in adolescents. Moreover, our study identified a notable positive correlation between the factor of excessive certainty and unstable interpersonal relationships. This suggests that a strong sense of overconfidence in one's mental state interpretations may contribute to the volatility observed in their relationships. Interestingly, unlike the findings of Duval et al,¹³ our research indicates that the interest/curiosity factor does not demonstrate any significant correlation with BPD symptoms. This divergence prompts further investigation into the nuanced roles these mentalizing components play in the manifestation of BPD traits, as well as the exploration of potential cultural differences.

The study further revealed that the uncertainty/confusion factor shows a positive correlation with affective empathy and a negative correlation with cognitive empathy. These findings suggest that uncertainty/confusion exhibits a complex interaction with different types of empathy. This means that individuals who experience higher levels of uncertainty/confusion might also be more emotionally attuned to others' feelings rather than cognitively. This may be because their own emotional experiences are more intense or fluctuating, and confusion/uncertainty about internal state makes it difficult for them to accurately explain and respond to the thoughts and feelings of others from a cognitive perspective. Alternatively, the interest/curiosity factor exhibits a significant positive correlation with both affective and cognitive empathy. This indicates that individuals who possess more curiosity or interest tend to exhibit higher levels of empathy. Furthermore, the excessive certainty factor demonstrates a significant positive correlation with cognitive empathy. This indicates that individuals possessing an elevated certainty about mental state may be better at understanding others' thoughts and perspectives. In summary, our findings align with those of Sharp et al,¹² indicating that although empathy is a concept closely related to RF, the two are distinct. Sharp¹² argues that empathy, while not a form of RF, depends on the individual's ability to emotionally react to the mental state of another, thus it also encompasses elements of RF.

The uncertainty/confusion factor significantly positively correlates with alexithymia dimensions, whereas the excessive certainty factor significantly negatively correlates with the same dimensions. Adolescents who exhibit greater uncertainty/confusion are more likely to encounter difficulties in regulating their emotions, while a certain amount of excessive certainty can actually facilitate their emotional regulation. This is consistent with the findings of most scholars that uncertainty/confusion about mental states is often associated with a wide range of clinical issues.²³⁻²⁶ Interestingly, excessive certainty reveals its complexity; it serves to aid in emotional regulation on a personal level, yet from an interpersonal perspective, it can contribute to more unstable relationships. This perhaps suggests that we need to understand RF from multiple perspectives, highlighting the complex interplay between individual psychological adjustment and the quality of interpersonal relationships. Furthermore, a significant negative correlation has been observed between interest/curiosity and externally oriented thinking. This suggests that individuals with a strong interest/curiosity about mental states may prioritize their internal emotional experiences over engagement with external events and sensations.

Despite these results, this research presents some limitations. Firstly, although Duval and colleagues established a three-factor structure for the RFQY, which more comprehensively reflects the nuances of mentalization, it lacks a comprehensive scoring system or a clear threshold between effective and ineffective mentalization. This gap hinders its practical clinical application. Secondly, the study's focus on adolescents in Xiamen narrows its generalizability. Thirdly, the absence of Chinese versions of key psychological assessment tools, such as the Child Reflective Function Scale (CRFS), the Movie for Assessment of Social Cognition (MASC), or the Child's Eyes Test (CET), limits our ability to thoroughly verify the structural validity of the RFQY-C. Addressing these challenges is crucial for future research.

Conclusion

This study validates the Chinese version of the Three-Factor Reflective Functioning Questionnaire for Youth (RFQY), demonstrating its reliability in assessing RF among Chinese adolescents. The distinct correlations of the RFQY's factors - uncertainty/confusion, interest/curiosity, and excessive certainty - with BPD symptoms, empathy, and alexithymia

highlight the complexity of adolescent psychological processes. Particularly, the uncertainty/confusion factor's link to BPD symptoms and alexithymia, and its varying relationship with empathy types, underscores its significance in adolescent emotional and interpersonal dynamics. These findings enhance the understanding of reflective functioning and its role in adolescent mental health.

Acknowledgments

We extend our sincere thanks to all team members for their diligent and committed efforts throughout our study.

Disclosure

The authors declare no conflict of interest regarding the publication of this paper.

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