Original Article

Human Resources in Chinese Youngsters – A Chinese Adaptation of the QARCA

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Abstract. *Background:* The German Questionnaire to Assess Resources for Children and Adolescents (QARCA; Lohaus & Nussbeck, 2016) is a diagnostic questionnaire that estimates six personal resources and four environmental resources. This study aimed to develop a Chinese version of the QARCA. Due to the important cultural differences between China and Western countries, we focused on whether these resources in a Chinese sample could be similarly assessed with Western samples and whether the association between the subscales of the QARCA was comparable across cultures. *Methods:* The validation sample consisted of 2,600 Chinese students and 393 parents. *Results and Discussion:* The results indicated that the Chinese version was soundly adapted with its postulated factorial structure. Reliability estimates for the subscale scores were good and expected correlations within the QARCA, as well as with external criteria. It is the first Chinese measure that simultaneously assesses personal and environmental resources for youngsters.

Keywords: protective factors, resilience, youth development, psychological measurement, cross-cultural comparison

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During the development from childhood to adolescence, youngsters are exposed to many developmental tasks that represent risks and opportunities. According to the risk and protective factor models (e.g., Masten, 2014), the successful management of these depends on one's protective factors (i.e., resources). Resources are defined as factors that generally foster one's positive development. Broadly, resources fall into one of two categories: personal resources (i.e., individual strengths) and environmental resources (i.e., protective factors in one's surrounding). Contrary to risk factors that increase the likelihood of developing deficits or negative outcomes, protective factors are conceived to buffer the repercussions of risk factors on youth development. To promote youngsters' development, it is therefore important to be aware of their resources.

In China, youngsters have been the most important members of a family since the one-child policy was introduced in the 1980s. Creating an optimal environment for them is of paramount importance for most Chinese parents (Rasmussen, 2017). However, little is known about the actual resources of Chinese youngsters because there is no validated Chinese measure. To remedy this limitation, we adapted and validated a Chinese version of the theoretically based and empirically validated German diagnostic Questionnaire to Assess Resources for Children and Adolescents (QARCA; Lohaus & Nussbeck, 2016).

The QARCA Questionnaire

The QARCA consists of 60 items (for sample items, see ESM 1), with a 4-point rating scale from 1 (*never*) to 4 (*always*). It can be used in research as well as in therapeutic and educational contexts for diagnostics in 8–16-year-olds in individual or group test settings. It measures six personal and four environmental resources.

Personal Resources

Empathy and Perspective-Taking (EPT)

Empathy is defined as the capacity to understand, experience, and respond to emotions or feelings of another person, whereas perspective-taking refers to the ability to perceive or understand a particular situation from another's point of view (Galinsky, Maddux, Gilin, & White, 2008). These two aspects are negatively correlated with conduct behavior, but positively correlated with prosocial behavior (Eisenberg & Fabes, 1990).

Self-Efficacy

Self-efficacy (SEFF) refers to personal assumptions about the capability to accomplish a task. It can also be conceived of as confidence in one's competencies and is supposed to

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have a direct impact on behavior (Bandura, 1977). Moreover, SEFF determines how long an individual will bear adversities and enhances children's well-being and academic performance (Galla et al., 2014).

Self-Esteem

Self-esteem (SEST) encompasses one's subjective emotional evaluation of the self (Rosenberg, 1979). It is positively related to psychological health and negatively related to psychological disorders, such as anxiety and depression (Sowislo & Orth, 2013).

Sense of Coherence

Sense of coherence (SOC) is defined as "a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1979, p. 132). SOC is mandatory for understanding and controlling the world around oneself so that it prevents the development of emotional problems (Eriksson & Lindström, 2006).

Optimism

The subscale optimism (OPT) focuses on dispositional OPT, which is defined as a generalized and stable positive outcome expectation (Carver & Scheier, 2014). Previous research has indicated that dispositional OPT positively influences physical health, well-being, and coping (Mäkikangas, Kinnunen, & Feldt, 2004).

Self-Control

Self-control (SCON) is embedded in the concept of self-regulation (Carver & Scheier, 1998), which is the ability to regulate one's own emotions and behavior. SCON is positively related to goal achievement and delay of gratification (Rosenbaum, 1980). Being able to stand a delay of gratification in childhood has positive effects on social and cognitive competence, stress resistance, and frustration tolerance in adulthood (Shoda, Mischel, & Peake, 1990).

Environmental Resources

Parental Social and Emotional Support

The family is one of the most important support systems for youngsters. Both instrumental support (e.g., help with problem-solving) and emotional support (e.g., attachment and consolation) are integrated into parental social and emotional support (PSUP) in the QARCA. Perceived parental support is positively linked to the well-being of youngsters (Deci & Ryan, 2000).

Authoritative Parenting

Authoritative parenting (AUP) is characterized by high responsiveness and high demands (Baumrind, 1971). Authoritative parents react promptly to their children's needs, set clear standards and rules, monitor the child's behavior, and meanwhile enable their children to develop autonomy. Furthermore, AUP fosters positive youth development (Deci & Ryan, 2000).

Integration Into Peer Groups

During youth development, the importance of relationships with peers increases with age. Integration into peer groups (IPG) positively impacts problem-solving, conflict management, and the development of a self-concept (Erikson, 1968).

Educational Integration

Besides peers, classroom climate and academic performance can be regarded as other crucial factors for youth development. A positive classroom climate, which is a hallmark of high-quality instruction, positively affects students' social competence, SEST, and academic performance. In turn, high academic performance positively influences students' development (Helmke, 2001).

On the conceptual level, these resources have been regarded as distinct, yet partly overlapping constructs. For instance, individuals who perceive themselves as competent and worthy will generally expect higher probabilities of success and tend to be optimistic about future events (Gardner & Pierce, 1998). Parents' emotional support and responsiveness, as well as IPG, are related to basic psychological needs (Deci & Ryan, 2000). Moreover, environmental resources affect personal resources, and vice versa. These relations are reflected by the correlations of the 10 subscales (Lohaus & Nussbeck, 2016). Additionally, the authors report positive associations with prosocial behavior, adaptive emotion regulation, and well-being, as well as negative associations with vulnerability, stress, conduct problems, and parents' psychological pressure.

The Present Study

This study aimed to develop and validate a Chinese version (QARCA-C) of the QARCA. This would enable Chinese psychologists and educators to diagnose a child's and adolescent's resources and enable researchers to gain further insight into youth development in China. Moreover, this study will deepen our understanding of cultural differences and similarities by examining whether resources found in Western cultures can also be found in Chinese culture and whether the relations between the resources and external criteria are the same across cultures.

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After a translation and back-translation procedure (see ESM 2.1) and a pilot study (see ESM 2.2), we evaluated psychometric properties of the QARCA-C in a large sample of Chinese 8–16-year-olds. Based on the German study, we expected positive relations with emotion regulation, well-being, prosocial behavior, coping, and parenting, as well as negative relations with conduct problems and stress.

Method

Participants and Study Design

Participants were 2,716 students and 393 parents from Baoding, China. After removing 116 invalid cases (due to the extremely short response time), we considered data from 1,350 boys and 1,250 girls (M_{age} = 12.51; SD = 1.84; age range: 8–16 years; 5.11% 3rd graders, 6.73% 4th graders, 8.15% 5th graders, and 7.11% 6th graders, 35.81% 7th graders, 21.42% 8th graders, and 8.89% 9th graders, and 7% 10th graders). All participants were Mandarin speaking. For comparison, the German sample consisted of 2,513 students (1,229 girls; M_{age} = 12.20; SD = 2.21; age range: 8–16 years) and 314 parents (Lohaus & Nussbeck, 2016).

Participants filled in one out of six sets of questionnaires as part of a school assignment during school holidays or weekends. The six different sets of questionnaires (see ESM 3.1) consisted of the QARCA-C, and one, or a combination, of the following measures described in the next section. Additionally, 114 participants (64 girls) filled in the QARCA-C after 2 weeks.

Participants and their parents or guardians were informed about the nature of this study and their right to withdraw from participation without any negative consequence. The ethics review committees of Bielefeld University approved this study.

Measures

Emotion Regulation Questionnaire for Children and Adolescents

We used the Chinese Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CCA; Liu, Chen, & Tu, 2017) to assess emotion regulation: cognitive reappraisal (six items) and expressive suppression (four items) using 7-point answer formats.

Quality of Life Questionnaire for Children and Adolescents

The self-report KIDSCREEN-10 (The KIDSCREEN Group, 2006) is a standardized screening instrument for children's subjective health and well-being. The Chinese version was provided by the KIDSCREEN organization. Answers were scored on a 5-point rating scale.

Strength and Difficulties Questionnaire

The Strength and Difficulties Questionnaire (SDQ; Goodman & Goodman, 2009) is a behavioral screening questionnaire for children and adolescents. The Chinese 3-point self-report (available under http://www.sdqinfo.com) includes 25 items measuring (a) emotional problems, (b) conduct problems, (c) hyperactivity, (d) peer relationship, and (e) prosocial behavior. The four difficulty subscales (a–d) can be summed up to generate a total difficulties score.

German Questionnaire for the Measurement of Stress and Coping in Children and Adolescents

The Questionnaire for the Measurement of Stress and Coping in Children and Adolescents (SSKJ; Lohaus, Eschenbeck, Kohlmann, & Klein-Heßling, 2006) is a self-report questionnaire covering (a) stress vulnerability (7 items); (b) five coping strategies (seeking social support, problem solving, avoidant coping, palliative emotion regulation, and anger-related emotion regulation; 30 items in all); and (c) stress symptoms (physical and psychological symptoms; 18 items). In a preliminary study (in preparation), we back-translated and validated the Chinese version using a large sample.

Egna Minnen Barndoms Uppfostran

To measure parenting behaviors from the child perspective, we used the validated Chinese Egna Minnen Barndoms Uppfostran (s-EMBU; Jiang, Lu, Jiang, & Xu, 2010). It consists of 21 four-point scale items covering rejection, emotional warmth, and overprotection. Participants were asked to respond twice to each item (i.e., separately for their mothers and fathers).

QARCA-C Parent Report

The QARCA-C parent report measures the same 10 dimensions as the self-report, except for the use of "my child" instead of "I" in the item wordings.

Internal consistencies of all subscales are presented in ESM 3.7 and 3.8.

Results

Descriptives

Table 1 shows descriptive statistics and mean comparisons between the language versions. ESM 3.2 presents the results of mean comparisons between boys and girls.

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Table 1. Sample descriptives and comparison of means between the language versions

	China (*N* = 2,600)		Germany (*N* = 2,513)			
	M	*SD*	*M*	*SD*	*t* test	Cohen's *d*
EPT	3.00	0.60	3.09	0.53	−5.68***	.16
SEFF	2.79	0.54	3.00	0.48	−14.70***	.41
SEST	2.61	0.67	3.19	0.52	−34.50***	.97
SOC	3.00	0.55	3.16	0.48	−11.07***	.31
OPT	3.07	0.59	2.97	0.50	6.53***	−.18
SCON	2.93	0.56	2.98	0.56	−3.19**	.09
PSUP	3.02	0.74	3.69	0.47	−38.50***	1.08
AUP	2.90	0.70	3.45	0.52	−31.81***	.89
IPG	3.20	0.65	3.52	0.45	−20.40***	.59
EDUI	3.24	0.68	3.35	0.60	−6.13***	.18
Total score	2.98	0.46	3.24	0.32	−23.39***	.65

Note. *p < .05. **p < .01. ***p < .001. AUP = authoritative parenting; EDUI = educational integration; EPT = empathy and perspective-taking; IPG = integration into peer groups; *M* = mean; OPT = optimism; PSUP = parental social and emotional support; SCON = self-control; *SD* = standard deviation; SEFF = self-efficacy; SEST = self-esteem; SOC = sense of coherence. The degree of freedom of all subscales was 5,111.

Scale Analyses

Before performing scale analyses, we particularly inspected the reverse-worded items. Various studies show that reverse-worded items are problematic in Chinese samples and can cause measurement bias (e.g., Zhong, Wang, Li, & Liu, 2009). We decided to exclude those items that were only weakly related (r < .20) to their corresponding scale (Item 17 from the QARCA-C; Item 7 and Item 23 from the SDQ-C).

Item metric analyses (Table 2) for the QARCA-C revealed expectable corrected item-total correlations (r_{it} = .34 to .76) and standardized factor loadings of items on the respective subscales. All subscales show good internal consistencies.

Factor Structure

Confirmatory factor analyses (CFA) were estimated to examine the factor structure of the QARCA-C using the weighted least square mean and variance adjusted (WLSMV) estimator implemented in *Mplus* 8.2 (Muthén & Muthén, 1998–2019). The results of unidimensional CFAs (Table 3) suggested that each of the 10 measurement models for the subscales fit the data acceptably well (all RMSEA < .08; all CFI > .98). All items loaded significantly on their latent factors (all λ_{stand} > .46, all ps < .001). For the unidimensional CFAs, specific residual correlations were allowed based on model modification indices. Similar to the original study, we allowed for 15 residual correlations (see ESM 3.3 and 3.4). Although this points to a facet structure of the subscales, we did not differentiate between these facets to be in line with the German version. Finally, the 10-factor CFA model showed an adequate model fit, with χ^2 = 8,847.444, df = 1,592, p < .001, CFI = .931, RMSEA = .042, 90% CI = [.041, .043].

The results of the equivalence testing (using multi-group CFAs) across gender showed that for all subscales, full metric or full scalar invariance holds (see ESM 3.5). ESM 3.6 displays fits for measurement invariance models across two language versions. For four subscales, full metric/partial scalar invariance was supported; the remaining six subscales corroborated partial metric invariance by setting free one to four loadings.

The correlations between the subscales are principally moderate to strong and vary considerably (Table 4; smallest r = .27 for EPT with PSUP, largest r = .72 for IPG

Table 2. Item analyses for the Chinese study and German study (in parentheses)

			r_{it}		λ_{stand}	
	McDonald's ω	Cronbach's α	Min	Max	Min	Max
EPT	.82	.82 (.78)	.52 (.42)	.62 (.60)	.60 (.48)	.77 (.71)
SEFF	.72	.72 (.81)	.37 (.56)	.53 (.64)	.46 (.60)	.76 (.74)
SEST*	.80*	.71* (.82)	.51* (.41)	.65* (.63)	.64* (.50)	.75* (.75)
SOC	.70	.70 (.69)	.34 (.37)	.51 (.48)	.47 (.45)	.71 (.60)
OPT	.79	.78 (.72)	.46 (.37)	.61 (.50)	.61 (.43)	.81 (.63)
SCON	.71	.70 (.68)	.36 (.26)	.50 (.44)	.48 (.34)	.69 (.60)
PSUP	.84	.86 (.89)	.53 (.64)	.76 (.74)	.66 (.70)	.90 (.79)
AUP	.80	.80 (.77)	.44 (.42)	.65 (.54)	.44 (.46)	.82 (.67)
IPG	.85	.84 (.79)	.54 (.42)	.70 (.61)	.63 (.40)	.83 (.76)
EDUI	.89	.89 (.87)	.62 (.52)	.76 (.66)	.69 (.52)	.92 (.79)

Note. AUP = authoritative parenting; EDUI = educational integration; EPT = empathy and perspective-taking; OPT = optimism; PSUP = parental social and emotional support; SCON = self-control; SEFF = self-efficacy; SEST = self-esteem; SOC = sense of coherence; IPG = integration into peer groups; r_{it} = adjusted item-total correlation; λ_{stand} = standardized factor loading; * = without Item 17.

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Table 3. Goodness-of-fit indices of the unidimensional confirmatory factor analyses for the subscales (WLSMV estimates)

					90% CI		
	χ^2	*df*	*p*	RMSEA	Lower	Upper	CFI
EPT	69.16	8	<.001	.05	.04	.07	.99
SEFF	19.09	7	<.001	.03	.01	.04	.99
SEST	3.91	3	.27	.01	.00	.04	1.00
SOC	81.42	8	<.001	.06	.05	.07	.99
OPT	82.87	7	<.001	.07	.06	.08	.99
SCON	83.54	9	<.001	.06	.05	.07	.98
PSUP	159.50	9	<.001	.08	.07	.09	.99
AUP	120.03	7	<.001	.08	.07	.09	.99
IPG	97.63	7	<.001	.07	.06	.08	.99
EDUI	87.68	6	<.001	.07	.06	.08	.99

Note: N = 2,600. AUP = authoritative parenting; CFI = comparative fit index; CI = confidence interval; EDUI = educational integration; EPT = empathy and perspective-taking; IPG = integration into peer groups; OPT = optimism; PSUP = parental social and emotional support; RMSEA = root-mean-square error of approximation; SCON = self-control; SEFF = self-efficacy; SEST = self-esteem; SOC = sense of coherence.

and EDUI). All correlations correspond to those of the German study regarding the direction of the association, albeit they are generally more elevated.

Relations to External Criteria

ESM 3.7 and ESM 3.8 present all correlations between QARCA-C resources and external criteria. As expected, all resources positively related to cognitive reappraisal. However, 6 of 10 resources were positively associated with expressive suppression. As assumed, resources and well-being were also positively related.

Concerning the relations between resources and the SDQ subscales (ESM 3.8), the overall results were in line with our assumption. All resources positively related to prosocial behavior and negatively related to hyperactivity and peer relationship problems. Most resources negatively related to emotional and behavior problems.

We expected negative relations between resources and stress, as well as positive relations between resources and coping. Most resources were negatively related to stress vulnerability and stress symptoms (ESM 3.7). Except for SEST, we found negative associations between resources and anger-related emotion regulation. Avoidant coping was positively related to SEFF, SEST, SOC, OPT, and SCON. Participants who reported higher levels of resources also reported higher levels of seeking social support, problem-solving, and palliative emotion regulation.

We found the expected positive correlations between emotional warmth from both parents and resources. Parents' rejections were negatively related to PSUP, AUP, and EDUI. Overprotection had less influence on resources: Mothers' overprotection was negatively related to SOC and PSUP, whereas no relation between fathers' overprotection and resources was found.

Agreement Between Self- and Parent Reports

Surprisingly, and contrary to the German study, we could not find *any* significant correlation between QARCA-C self-reports and parent reports.

Test–Retest Reliability

Test–retest correlation over 2 weeks for each subscale score varied between r = .72 and .93, all ps < .001 (in the German study: r = .53 to .86, all ps < .05).

Table 4. Intercorrelations between the subscales in the Chinese study and the German study (in parentheses)

	EPT	SEFF	SEST	SOC	OPT	SCON	PSUP	AUP	IPG
SEFF	.47 (.30)								
SEST	.36 (.14)	.58 (.47)							
SOC	.52 (.33)	.66 (.56)	.54 (.49)						
OPT	.51 (.35)	.64 (.53)	.57 (.59)	.68 (.58)					
SCON	.55 (.34)	.60 (.39)	.48 (.39)	.62 (.40)	.62 (.50)				
PSUP	.27 (.23)	.37 (.28)	.41 (.40)	.37 (.32)	.44 (.39)	.38 (.30)			
AUP	.33 (.29)	.41 (.28)	.42 (.30)	.40 (.34)	.46 (.33)	.43 (.34)	.69 (.62)		
IPG	.39 (.26)	.41 (.35)	.43 (.36)	.40 (.35)	.47 (.39)	.42 (.39)	.41 (.31)	.43 (.29)	
EDUI	.38 (.26)	.43 (.33)	.44 (.43)	.44 (.35)	.53 (.45)	.45 (.45)	.46 (.38)	.48 (.34)	.72 (.58)

Note. All correlations are significant with p < .001. AUP = authoritative parenting; EDUI = educational integration; EPT = empathy and perspective-taking; IPG = integration into peer groups; OPT = optimism; PSUP = parental social and emotional support; SCON = self-control; SEFF = self-efficacy; SEST = self-esteem; SOC = sense of coherence.

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Discussion

The purpose of this study was to develop a Chinese version of the QARCA questionnaire. Overall, the results show that the QARCA-C is a sound translation of the German original version: (a) all items show appropriate item-total correlations, (b) the scores of the QARCA-C subscales display acceptable to high internal consistencies, (c) the scores display high temporal stability, (d) the internal structure is similar to the original scale with (partial) scalar or (partial) metric invariance across gender and language versions for all subscales, and (e) all subscales are positively associated.

As for the German version, we had to allow for several residual correlations, which may (in parts) point to a facet structure of the subscales. At this point, we can only speculate about the genesis of these residual correlations. It seems that some of the residual correlations are due to wording effects (e.g., Items 55 and 60 include *comfortable*, and Items 42, 45, and 47 *rules*), whereas others more clearly reflect facets of the subscale (e.g., Items 6 and 32 cover more cognitive aspects of EPT than the remaining four items that cover the more emotional/feeling-oriented side; Items 13 and 24 of SOC cover *control* aspects rather than *understandability*). Whether the residual correlations actually cover psychologically meaningful facets of the subscales cannot be answered with the present research. Future studies should explore the potential facet structure by linking the potential facets to external criteria and investigating the differential associations.

Overall, most associations between QARCA-C resources and external criteria correspond to previous findings. However, the results also indicate some differences. Regarding emotion regulation, studies in Western cultures (e.g., Goldstein, Tamir, & Winner, 2013) have underlined the adaptive role of cognitive reappraisal and the maladaptive role of expressive suppression. In this study, resources positively related to cognitive reappraisal. Yet, we also found positive associations between expressive suppression and some of the resources. From a cross-cultural perspective, expressive suppression may be dysfunctional for Western youngsters, but not so for Chinese. This notion is in line with the study by Soto, Perez, Kim, Lee, and Minnick (2011), who found that expressive suppression negatively related to psychological outcomes in an American sample, but not in a Chinese sample. The authors argue that the use of suppression is more normative in China, whereas expressiveness is more normative in the West. Similarly, a binational study showed that, compared to Americans, Chinese are more reluctant to express their feelings and wishes (Eid, Langeheine, & Diener, 2003).

Concerning the relationships between parenting style and children's resources, the Chinese and the German samples show only slightly comparable results. Comparable to the German findings, we found that parents' emotional warmth was positively related to youngsters' resources. Furthermore, rejection from Chinese fathers seems to have negative effects only on children's environmental resources, whereas rejection from Chinese mothers also negatively affects children's personal resources. The German study shows that both parents' emotional pressure is a risk factor during the development of resources. In our study, Chinese parents' overprotection has almost no association with children's resources. We have to emphasize that participants' evaluation strongly depends on their perception and definition of *too much control and warmth*. Moreover, in the rapidly changing Chinese culture, which is progressing toward capitalism, Western ideals are being incorporated into child-rearing habits of Chinese parents (Way et al., 2013). Both could explain that the participants reported, on average, a rather low level of overprotection ($M = 2.23$, $SD = .54$). Additionally, the differences between the German and our study may also be due to the fact that we could not use the Zurich Brief Questionnaire for the Assessment of Parental Behaviors (Reitzle, Winkler Metzke, & Steinhausen, 2001), which was used in the German study, because there is no validated Chinese translation.

Most strikingly, and in contrast to the German QARCA study, there was *no* significant correlation between the self-reports and parent reports. Hence, the two reports reflect completely different views. Cultural differences in parent–child communication may explain this result. Su and Liu (2013) reviewed cross-cultural studies on parent–child communications and found that Western parents and children talk more about personal topics (e.g., wishes, emotions, and psychological needs), whereas in Eastern families, parents and children talk about actions and their consequences. In a meta-analysis, Tang, Tang, Ren, and Wong (2020) concluded that low-quality parent–child communication is one of the most important factors for the high depression prevalence rate in Chinese adolescents. Nevertheless, there are validation studies with respect to Chinese youngsters' self-reports on intra-psychological constructs showing evidence of validity. Therefore, we assume that youngsters' self-reports may be more useful than parent reports in China. However, this assumption has to be evaluated with external (not self-reported) criteria in future research.

Several limitations of this study should be taken into consideration. First, in the QARCA-C, the reverse-worded Item 17 was problematic and consequently excluded from the final version. An alternative item should be formulated and evaluated. Second, it may be that the zero correlations between parent and child reports are due to the fact that the parent version was not optimally designed. For the parent version, items of the child version were simply

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reworded, which may not work as well in the Chinese as in Western cultures. Further, it could be interesting to test the correlation between self-report and teacher/friend report to investigate if low rates of agreement between self- and other ratings are specific to the Chinese parent–child relation or generalize. Presuming that the parent version of the QARCA-C provides valid measures of the parent perception of the child's resources, the striking finding that there is no association between self- and parent reports in China is worth a deeper examination: It would be interesting to investigate whether this disagreement originates in parenting styles, a lack of time that parents and their children spend together, or other reasons, such as communication within the family.

Electronic Supplementary Material

The electronic supplementary material is available with the online version of the article at https://doi.org/10.1027/2698-1866/a000003

ESM 1. Example items of the QARCA
ESM 2. Translation and the pilot study
ESM 3. Results of the validation study

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