

Mediating Effects of Coping Style on the Relationship between Parenting Style and Adversity Quotient of Nursing Students

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Abstract

Background: Nursing is known as a stressful job; nursing students as the future workforce particularly require the adversity quotient (AQ) in order to successfully overcome difficulties and setbacks encountered amid their studies and in their future workplaces.

Aim: To explore the relationship among parenting style, coping styles, and AQ, and investigate the mediating effects of coping style on the relationship between parenting style and AQ among nursing students.

Methods: The study employed a cross-sectional and correlational design. A convenience sampling method was used to recruit nursing students ($n = 158$ valid) from a higher education institute in Macao SAR. Four measuring instruments were used, including (1) The Demographic Information Form, (2) The Adversity Quotient Scale, (3) The Simplified Coping Style Questionnaire, and (4) The Chinese Version of the Parental Styles Scale.

Results: The associations only existed between negative mother-parenting styles, negative coping styles and AQ, passive mother-parenting styles and passive copying ($r = -0.166, 0.276, 0.266, 0.232, 0.229, 0.186, 0.207, P < 0.05$); there is no statistically significant correlation between father parenting style and the score of AQ, negative coping style, and positive coping style at all. The obtained model fitting index: $\chi^2/df = 1.191$, RMSEA = 0.035, SRMR = 0.0305, TLI = 0.991, CFI = 0.997, indicating that the fitting indices of the model are all within the acceptable range, and there is a significant mediating effect of coping styles on the relationship between mother parenting styles and AQ of Macao nursing students.

Conclusions: Coping styles play an important role in mediating the relationship between parenting styles, particularly, mothering styles and AQ of Macao nursing students. Special attention should be paid to cultivating students' positive coping strategies in order to mediate the negative mothering styles and to enhance their AQ for better adapting to the challenges faced by them in school and in future working places and social environments.

Keywords

adversity quotient, coping style, Macao, nursing students, parenting style

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Introduction/background

The term adversity quotient (AQ) was coined by Paul Stoltz in 1997 in his book *Adversity Quotient: Turning Obstacles into Opportunities* (Stoltz, 1997). The AQ is defined as a person's ability to face and handle problems and challenges in life. To quantify the AQ, Stoltz developed an assessment method called the adversity response profile (ARP) with four dimensions (also called the CORE model): Control (perceived control over adversity, being able to predict and control events fosters adaptive preparedness), Ownership (perceived ownership of the outcome of adversity), Reach (perceived scope of the adversity, i.e., how

far the adversity gets into the areas of one's life), and Endurance (perceived duration of the adversity) (Stoltz, 1997). The AQ has been confirmed as an important variable that can predict how humans behave in difficult situations and endurance and can be used to improve social and

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personal effectiveness, therefore, it can be used as a psychosocial approach to enhancing the effectiveness of individuals, teams, families, communities, cultures, organizations, and societies (Phoolka & Kaur, 2012). Today, AQ becomes more and more important as the daily intensity of adversity rises, and attracts much attention from various areas, such as administration, human resource management, social science, education, etc. Nursing is known as a stressful job since it is associated with complex job demands and needs, high expectations, and excessive responsibility (Jacobs & Lourens, 2016); nursing students particularly require the AQ in order to successfully face their problems, overcome difficulties, and complete their duties as well as responsibilities in school, in the clinical environment, and in the future workplaces (Tian & Fan, 2014).

Parenting style, as an important factor, influences children's development and growth. Research findings show effective parenting helps children develop resiliency, enhance AQ, and directly mediate coping responses to adversities (Milevsky et al., 2007; Hoskins, 2014).

According to Lin and Yeh (2014), coping is considered as a cognitive or behavioral strategy that individuals adopt when facing adversities. Simultaneously, some scholars found that there was a relationship between parenting and coping styles; positive parenting styles for example warmth and understanding could promote adolescent's mature and positive coping styles while negative parenting styles including punishment and rejection foster immature and negative coping styles (Chen et al., 2017; Wan et al., 2015).

Review of Literature

Many scholars concluded that a person who has a high AQ can be better able to cope with setbacks and choose constructive responses, and will have high performance and success, controversially, people who have a low AQ lack confidence, and are unlikely to withstand adversity, and will always depend on others, especially parents, peers, and others (Phoolka & Kaur, 2012; Putri & Swandi, 2021; Safi'i et al., 2021). Several existing studies reveal that the AQ of nursing students is maintained at a low to moderate level (Wang et al., 2021; Yan et al., 2014). The factors that influence a person's AQ are very diversified, for middle school adolescent students or college students, the factors include dominance, a sense of personal freedom, self-esteem, enthusiasm, self-confidence, ambition, achievement motivation, child-care/parenting styles, household income, and parents' occupations (Choompunuch et al., 2021; Pangma et al., 2009; Yakoh et al., 2015).

Recent studies have confirmed that parenting styles have an influence on the AQ of individuals (Yakoh et al., 2015). Furthermore, other research findings have shown that parenting styles are significantly associated with college students'

emotional distress and coping strategies (Hou et al., 2020) and their resilience (Kritzas & Grobler, 2005).

Vinas and Aquino-Malabanan (2015) further confirm that coping, usually, as the first way to deal with adversity. There are two types of coping also called coping styles, which include: positive coping styles (e.g., positive reappraisal, problem-focused coping, positive meaning creation and growth) and negative coping styles (e.g., self-blame, withholding, and avoidance (Folkman & Moskowitz, 2000)). The positive coping style serves as a buffer to deal with adversity, conversely, the negative coping style is deemed as maladaptive and could elicit both externalizing and internalizing problem behaviors in the long term (Scarpa et al., 2006; Whitman & Gottdiener, 2015).

An indisputable fact is nursing students engage in various adversities including academic-related setbacks such as failure in exams; clinical placement, for example, facing various suffering clients, taking care of death and dying; relationships with others (preceptors, peers, other health team members, etc.), and personal difficulties, for instance, financial burdens, time management, and so on (Liu et al., 2015; Timmins & Kaliszer, 2002).

Most nursing students in Macao are local high school graduates, before entering university, they are living and growing up in a quite comfortable community without much pressure on competitiveness as 15 years of free basic education is implemented and over 95.4% of high school graduates enter university study in Macao (Education and Youth Development Bureau of Macao SAR, 2022). However, nursing education in Macao has experienced remarkable changes, transforming from hospital-based three-year diploma training to 4-year bachelor's degree tertiary education in the last 20 years. Students in nursing program have a higher level of stress than others (Liu et al., 2015), but possess a relatively low AQ (Wang et al., 2021). While, after graduation, they must work in a quite complex healthcare environment since Macao had been colonized by the Portuguese for more than 400 years till returning to China in 1999, resulting in a very multicultural society. That has been further compounded in recent years by a sharp increase in immigration and tourism, making the healthcare service environment even more challenging (Liu et al., 2015).

Furthermore, in the past three years, the COVID-19 pandemic makes the health service situation even more uncertain and complicated. Given that nursing students are the important future nursing workforce, and consideration of a few existing studies on the relationship between AQ, parenting styles, and coping styles, particularly in the Macao context, it is significant to investigate and identify the relationship between these three variables among nursing students. The ultimate goal is to deliberately improve the positive copying styles of nursing students and enhance their AQ and equip them for better adapting to future working and social environments.

Theoretical Framework

The theoretical framework of this study was based on Stoltz's conceptualization of AQ, which refers to the ability possessed by individuals to face and handle problems and challenges in life, consists of four dimensions including control, ownership, reach and endurance (Stoltz, 1997). On the other hand, acceptance-rejection parenting theory states that individuals who are commonly rejected by their parents demonstrate more defensive, hostile, and aggressive behaviors in most situations (Rohner et al., 2012). Oppositely, when parents adopt a positive parenting style to bring up their children, the children are more likely to use a positive coping style in problem-solving (Wolfradt et al., 2003). However, a longitudinal study suggested that parenting styles promote children's social adaptation development over time, but not always in the straightforward manner as researchers have expected (Mahasneh et al., 2013). Combined with the above views, it is reasonable for us to regard coping style as a mediator between parenting style and AQ.

The main hypotheses of this study were as following:

Hypothesis 1: Parenting styles has relationship with copying style among Macao nursing students.

Hypothesis 2: Copying style has relationship with AQ among Macao nursing students.

Hypothesis 3: Parenting style has relationship with AQ among Macao nursing students.

Hypothesis 4: Coping styles plays a mediating role in the relationship between parenting style and AQ among Macao nursing students.

Purpose

The purpose of this study is to explore the relationship among parenting style, coping styles, and AQ, and investigate the mediating effects of coping style on the relationship between parenting style and AQ among Macao nursing students.

Methods

Research Design

A cross-sectional descriptive and correlational design was adopted in this study.

Setting

The study was conducted in a public university offering Bachelor of Nursing program in Macao SAR (there are only two universities in Macao offering Bachelor of Nursing program, the other one is private).

Sample

The total number of the potential participants from Year 1 to Year 4 students is 220 and we aim to achieve a participation rate of 70% (Groves & Peytcheva, 2008). From January to April 2020, a convenience sampling method was applied and finally 160 undergraduate nursing students were recruit, with a 72.7% participation rate.

Inclusion and Exclusion Criteria

Full-time nursing students, voluntary participation in the study, being able to listen, speak, read, and write Chinese were included in the study. Students on suspension during the investigation were excluded from the study. For the sake of protecting privacy and self-esteem, it was not specifically indicated that single-parent families or those who did not live with their parents could not participate, but questionnaires with missing items (without fathering parenting style or mothering style data or both) would be considered invalid and would not be included in the statistics.

Ethical Considerations

Macao Polytechnic University Research Committee approved the study (No: RP/ESCSD-01/2019). The consent form was signed by each participant before data collection. It was ensured all participants were fully knowing the purposes and processes of the study, the confidentiality, and their identities would not be revealed in any study reports and publications. They were voluntary and could withdraw at any time without any penalty.

Study Instruments

Four instruments were employed to collect the data including (1) The Demographic Information Form developed by the research team. (2) The Chinese version of the Adversity Quotient Scale, which was originally developed by Stoltz (2000), and modified into a Chinese version by Li and Chen (2008). The scale is composed of 30 contexts (60 items) with 20 adversities and 10 prosperities. It is a 5-point Likert, the score of AQ is grouped into five levels, very low (≤ 59), low (60–94), medium (95–134), high (135–165), and very high (166–200); higher the score, the higher the AQ. The Cronbach's α of the overall scale and of the four dimensions are all over .70 (Li & Chen, 2008). In this study, Cronbach's α of the overall scale was .755. (3) Simplified Coping Style Questionnaire (SCSQ): It was developed by Xie (1998) and consists of two dimensions (positive and negative) with 20 items, 12 positive and 8 negative responses. It is a 4-point Likert scale (0 = never; 3 = very often), the overall Cronbach's α coefficient was .900, and .890 in this study. The SCSQ score reflects participants' coping style preferences, with a higher score indicating a

higher possibility that the participant would adopt the relevant coping style. (4) The Chinese version of the perceived parental rearing scale, which was first compiled by Perris et al. (1980) and named Egma Minnen av BardndosnaUppforstran (EMBU). In 1993, Chinese scholars Yue et al. (1993). translated and modified as EMBU-C, including two dimensions (fathering/paternal and mothering/maternal dimensions) with 66 items. Fathering dimension is composed of six styles, which are: (1) emotional warmth and understanding, (2) punishment and strictness, (3) excessive interference, (4) preference, (5) refusal and denial, and (6) overprotection; while mothering dimension includes five styles: (1) emotional warmth and understanding, (2) punishment and strictness, (3) excessive interference, (4) preference, and (5) refusal and denial. A 4-point Likert is used (never = 1, occasionally = 2, often = 3, always = 4, and unsuitable = 0), the score was determined according to the norm mean score \pm standard deviation (SD). The Cronbach's α coefficient of the total scale was .940, and .946 in this study. All the above questionnaires have been authorized by the original author or publisher.

Data Collection Procedure

Members of the research team asked the monitors of each class to assist in posting recruitment advertisements in the corresponding class WeChat groups, and the research purpose, process, etc. were stated in the advertisements. The above-mentioned questionnaires were distributed to the participants in a face-to-face manner by the investigators who had received unified training, and the participants were provided with instructions for filling the questionnaires. Participants were asked to imagine themselves in various situations and their immediate reactions. No right or wrong answer, and confidentiality of responses were stressed. It took about 35 minutes to complete the questionnaire, and the questionnaires were collected on-site after completion. A total of 160 students who met the inclusion criteria responded to the questionnaire.

Statistical Analysis

The SPSS version 26.0 (SPSS Inc., Chicago, IL, USA) and AMOS, version 21.0 (SPSS Inc., Chicago, IL, USA) were employed to analyze the data, and results were considered statistically significant if $P < .05$. The descriptive analysis includes frequency, the percentage for categorical variables (gender, grade, nationality, whether an only child, relationship among classmates, internship experience), and the mean and SD for continuous variables (age, GPA, scores of AQ, SCSQ, EMBU). The analysis for establishing the structural equation model included the following steps: (1) Pearson's r was used to identify the associations between parenting styles, coping styles and AQ, and then, selecting the associated variables such as mothering style 2

(punishment, strictness), mothering style 3 (excessive interferences), mothering style 4 (preference), and mothering style 5 (rejection, denial) as independent variables, the score of AQ as the dependent variable, and the negative coping style being treated as a mediator, and the maximum likelihood ratio is used to estimate the structural equation; (2) taking mothering style 2 (punishment), 3 (excessive involvement), mothering style 4 (preference), and 5 (rejection, denial) as independent variables, the total AQ score as the dependent variable, the negative coping style was treated as a mediator, and the maximum likelihood ratio is used to estimate the overall structural equation model. Furthermore, Chi-square (χ^2) and Chi-square divided by degrees of freedom (χ^2/df), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) were used to measure the absolute fit-of-model (Tabachnick & Fidell, 2001).

Results

Sample Characteristics

Finally, 158 questionnaires were obtained (two were deleted because of missing data), and the valid returning rate was 98.75%. Among 158 participants, 34 males (21.5%), 124 females (78.5%), aged from 18 to 28 with an average of 20.70 (SD = 1.87); 37 first-year students (23.4%), 36 sophomores (22.8%), 37 (23.4%) third-year students, and 48 (30.4%) fourth-year students. Of 158, 151 (95.6%) are Chinese nationals, and 7 (4.4%) are Portuguese nationals.

Research Question Results

Table 1 presents the relationship among parenting styles, coping styles, and AQ of nursing students. (1) The score of AQ was significantly negatively correlated with negative coping styles and mothering style 3 (excessive involvement); (2) the positive coping style was significantly positively correlated with mothering style 1 (emotional warmth), mothering style 3 (excessive interference), and mothering style 4 (preference); (3) the negative coping style was significantly positively correlated with mothering style 2 (punishment, sternness), mothering style 3 (excessive interference), mothering style 4 (preference), mothering style 5 (refusal, denial); and (4) Notably, there is no significant correlation between father parenting styles and the score of AQ, negative coping style, and positive coping style at all. The associations only exist between mother-parenting styles, negative coping styles, and AQ.

Figure 1 shows the structural equation model fitting index. The obtained model fitting index: $\chi^2/df = 1.191$ (between 1 and 3), RMSEA = 0.035 (<0.05), SRMR = 0.0305 (<0.05), TLI = 0.991 (>0.900), and CFI = 0.997 (>0.900), indicating

Table 1. The Pearson Correlation Matrix of Parenting Styles, Coping Styles, and AQ ($n = 158$).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. AQ score	1													
2. Passive copying	-.045	1												
3. Negative copying	-.329**	.533**	1											
4. F1 (emotional warmth and understanding)	.014	.070	.055	1										
5. F2 (punishment and strictness)	.086	.086	.116	.204*	1									
6. F3 (excessive interference)	.139	.139	.105	.441**	.774**	1								
7. F4 (preference)	.057	.057	.125	.647**	.219**	.368**	1							
8. F5 (refusal, denial)	.044	.044	.108	.194*	.781**	.722**	.286**	1						
9. F6 (overprotection)	-.102	.037	.085	.507**	.633**	.793**	.390**	.672**	1					
10. M1 (emotional warmth)	-.042	.203*	.097	.337**	-.180*	-.101	.078	-.246**	-.019	1				
11. M2 (punishment, sternness)	-.104	.003	.276**	-.108	.548**	.331**	.044	.513**	.311**	-.256**	1			
12. M3 (excessive interference)	-.166*	.186*	.266**	.104	.360**	.369**	.089	.384**	.384**	.244**	.525**	1		
13. M4 (preference)	.030	.207**	.232**	.149	-.030	.054	.420**	.008	.010	.566**	-.067	.176*	1	
14. M5 (refusal, denial)	-.112	.003	.229**	-.102	.518**	.316**	.068	.629**	.371**	-.231**	.750**	.588**	-.102	1

AQ = adversity quotient, F = father parenting style, M = mother parenting style.

* $P < 0.05$.** $P < 0.01$.

that the fitting indices of the model are all within the acceptable range, the mediating equation is acceptable. As a result, the structural equation model is established as Figure 1.

Discussion

This is the first trial to investigate the relationship among three variables of parenting styles, coping styles, and AQ of the Macao nursing students. The results reveal statistically significant positive associations between the negative coping styles and negative mother parenting styles ($P < 0.05$), and a negative association between the negative coping styles and AQ ($P < 0.05$). These results are in line with other similar studies, such as Swanson et al. (2011) found that children with a positive parenting style reported the use of higher levels of active coping strategies because, in positive parenting, parents' warmth and understanding are grateful supports for children when they are facing problems or obstacles and backup them to coping positively. Whereas children with authoritarian parenting styles (negative) tend to use more avoidant coping (Chan, 2010; Gong et al., 2015; Zhou et al., 2008). Furthermore, in accordance with Rahman et al. (2020), a negative coping style is oriented to modifying reactions to events by using behavioral or cognitive adjustment strategies to reduce emotional stress, including problem avoidance, self-blame, and some unhealthy behaviors, which all can be developed by the parenting process. Therefore, our similar study results further confirmed that negative mother parenting style is a positive predictor of children's use of negative coping styles. This evidence reminds the importance of enhancing positive parenting styles, especially positive mothering styles in cultivating positive coping styles of children, which will benefit children's psychological growth and handling of difficulties.

In terms of a negative association between negative coping styles and AQ, the theoretical explanations are positive coping and negative coping are diametrically opposed coping styles. Individuals who use a positive coping style usually take constructive actions and create opportunities for growth when facing personal challenges. In other words, their AQ is enhanced (Lee et al., 2012). Oppositely, individuals who adopt negative coping styles try to avoid stress as a way to minimize distress and focus on negative thoughts (Ding et al., 2015). This consequently deteriorates the individuals' AQ. Nursing students always face multiple adversities (Tian & Fan, 2014), it is significant in nursing education to add tailor-made programs such as mentorship or peer to peer programs to strengthen positive coping strategies in order to enhance their AQ.

In line with our study hypothesis 2, coping styles may have a mediating effect on the relationship between parenting style and AQ, Figure 1 indicates that the negative coping style was found to mediate the relationship between negative mothering styles and AQ of nursing students, and model fitting indices were all within the acceptable range.

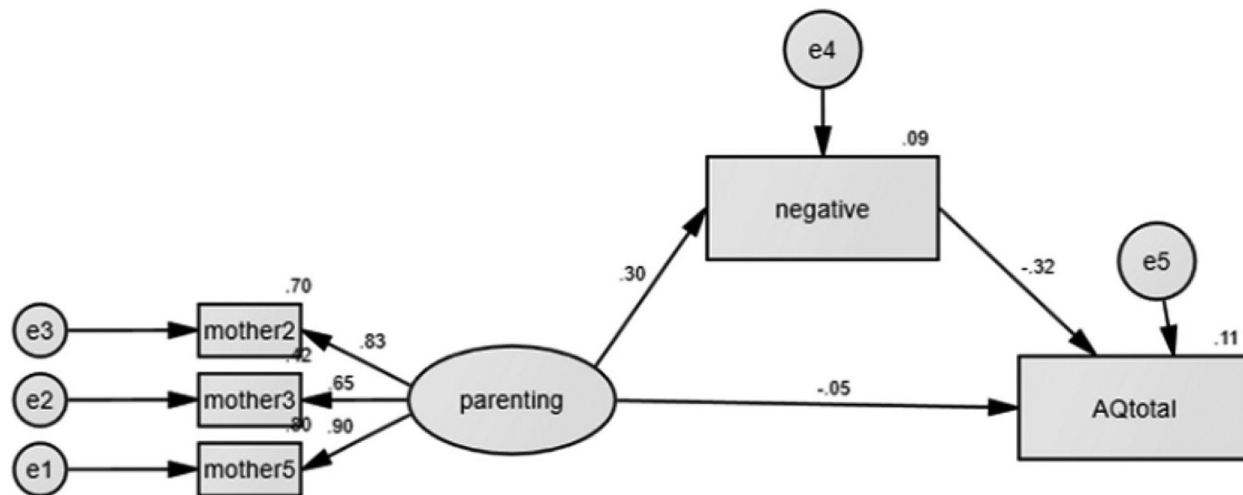


Figure 1. Structural equation model of mediating effects of coping style on the relationship between mother parenting styles and AQ.

Specifically, in our analysis process, when moving out of the negative coping styles, there was no association between parenting styles (negative mothering styles) and AQ. This means the negative coping styles indeed play mediating effects on the relationship between negative mothering styles and AQ of Macao nursing students.

In accordance with the opinion of Stoltz (2000) that individuals who always survive in difficult circumstances (negative mothering styles) will make this situation as a challenge that must be faced, which means applying negative coping strategies to deal with the obstacles (AQ). Based on Kaye et al. (2015) view, coping, the first way to deal with adversity, is a process of managing toxin circumstances, expending effort to solve personal and interpersonal problems, and seeking to master, minimize, reduce or tolerate adversity situations. People who have more negative influences from negative mothering might use more negative coping strategies, which would further lead to lower levels of AQ. Therefore, we can say negative coping was a full mediator between negative mothering styles and AQ. This result oppositely confirmed that both positive mother parenting and positive coping styles are paramount in enhancing nursing students' AQ. It is also meaningful for nursing educators to purposively offer the education programs for publics about positive parenting skills as well as help nursing students use positive strategies to cope with various adversities in order to prepare them as future professional nurses with a high level of confidence and AQ.

Strengths of the Study

This study used structural equations to explore the relationship among coping styles, parenting styles and AQ of nursing students in Macao. The findings revealed that negative mothering styles (punishment/sternness, excessive interference, and rejection/denial) cause children to use negative

coping styles, which further lead to lower AQ levels. The study results provided a clearer understanding of the relationship between the three variables.

Limitations of the Study

Although the sample size was sufficient, all samples were from only one tertiary education institute, therefore, the generalizability is cautioned. In addition, the cross-sectional design was used, which constrained us to determine causal relationships among variables. Finally, in this study, participants were recruited from Macao. Interpretation of current findings may be limited by cultural context. Future prospective studies can verify whether the conclusions of this study are consistent across cultures.

Implications for Practice

This study found that negative coping styles had a significant mediating effect between negative maternal style and AQ. It shows that the negative maternal style itself does not directly predict the AQ, it makes the subjects form a poor AQ after forming a negative coping style. This result implies that an intentional coping-style behavioral intervention can help individuals improve their abilities to cope with adversities. Specifically, educators and parents should encourage and guide adolescents to adopt positive coping strategies instead of negative ones. For example, demonstrating how to convert negative perspectives into positive ones, providing training to help young people master positive coping strategies. Another revelation is that a mother's attitude is very important for a child's mental health. The warmer the mother is to the child, the more confident the child is, and the easier it is to establish an intimate relationship with others; if the mother is too strict, interferes excessively, and denies the child, the child will feel insecure, inferior, and

lack the courage to explore, which will lead to incompetent utilizing social support systems and adopting negative coping styles to cope with negative life events. Therefore, it is suggested that the prevention of adolescent psychological problems should start from the roots, starting from the styles of parenting.

Conclusions

Based on the study results, we conclude that (1) there are associations that existed between negative mother-parenting styles, negative coping styles and AQ, but no significant correlation between father-parenting style and the score of AQ, negative coping style, and positive coping; (2) there is a significant mediating effect of coping styles on the relationship between mother parenting styles and AQ of nursing students; (3) coping styles play an important role in mediating the relationship between parenting styles, particularly, mothering styles and AQ; and (4) special attention should be paid to cultivating students' positive coping styles in order to mediate the negative mothering styles and to enhance their AQ for better adapting to the challenges faced by them in school or in future working places and social environments.

Authors' Contributions

Ming Liu: Manuscript drafting and preparation. Xin Wang: Conceptualization, data collection and analysis, manuscript drafting.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical Statement



The research study for the submitted manuscript was subjected to a full review by an institutional ethics committee.

- The name of the ethics committee: Macao Polytechnic University Research Committee.
- The approval number: RP/ESCSD-01/2019/E01.
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