

Article

Developmental Trajectories of Symptom-Specific Anxiety in Chinese Preschoolers: The Role of Maternal Anxious Rearing Behaviors

Siyu Zhou ^{1,2}  and Xiaowei Li ^{1,*}

¹ Faculty of Education, Beijing Normal University, Beijing 100875, China

² Department of Experimental Psychology, University of Oxford, Oxford OX2 6HT, UK

* Correspondence: xiaoweili@bnu.edu.cn

Abstract: Although developmental trajectories of anxiety have begun to be explored, most research has focused on total anxiety symptom scores in middle childhood and adolescence. Little is known about the developmental trajectories of specific anxiety symptoms in early childhood. This three-wave longitudinal study investigated (1) the developmental trajectories of four specific anxiety symptoms (separation anxiety, special fear, social anxiety, and generalized anxiety) during early childhood, and (2) the association between maternal anxious rearing behaviors and these four specific anxiety symptoms concurrently and over time. Mothers of 105 Chinese children completed the Preschool Anxiety Scale (PAS) and the “Egna Minnen Beträffande Uppfostran” for parents (EMBU-P) to report their child’s anxiety symptoms and their own anxious rearing behaviors when their child was 2–4, 3–5, and 6–7 years old. The results of latent growth curve modelling (LGCM) showed that participating children exhibited a slight linear decrease in special fear and social anxiety across three time points, whereas the trajectories of separation anxiety and generalized anxiety remained stable. Maternal anxious rearing behaviors were significant and positively related to children’s separation anxiety at T3 and specific fear at T1 and T2 but unrelated to social anxiety and generalized anxiety at any time points. These findings help us better understand how various types of anxiety problems develop in early life and isolate the risk factors (e.g., maternal anxious rearing behaviors) contributing to the emergence and continuity of anxiety problems as early as possible.

Keywords: specific anxiety symptoms; developmental trajectories; maternal anxious rearing; early childhood; China



Citation: Zhou, S.; Li, X. Developmental Trajectories of Symptom-Specific Anxiety in Chinese Preschoolers: The Role of Maternal Anxious Rearing Behaviors. *Sustainability* **2022**, *14*, 16402. <https://doi.org/10.3390/su142416402>

Academic Editors: Philip Li, Yong Jiang, Xiumin Hong and Li Luo

Received: 29 October 2022

Accepted: 5 December 2022

Published: 8 December 2022

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Anxiety can emerge early in life, with a worldwide prevalence rate of 8.5% in children younger than 7 years [1]. Anxiety problems in early childhood can disrupt early social, emotional, and academic development and are associated with a series of comorbid problems such as lower positive affectivity, depressive and oppositional defiant disorders, disruptive behavior disorders, and sleep problems [2,3]. More than that, anxiety problems in early childhood can persist into later childhood and adolescence [4] and increase the risk of other mental health problems such as depression and substance use in the future [5].

Given the prevalence, persistence, and impairment of anxiety problems in early childhood, it is important (a) to better understand how anxiety problems develop in early childhood and (b) to isolate the risk factors contributing to the emergence and continuity of anxiety problems as early as possible. However, most previous studies focused on the development of anxiety problems in middle childhood and adolescence [6,7]. Only a few studies investigated the developmental trajectories of anxiety problems in early childhood but reached no clear consensus. For example, in the US, Kertz et al. (2019) [8] followed 272 3–5-year-old children for 6.5 years and identified four trajectories of anxiety symptoms (i.e., high-stable, moderate-stable, high-decreasing, and low-decreasing groups).

In the Netherlands, De Lijster et al. (2019) [9] followed a population-based sample of 7499 children from 1.5 to 6 years old and identified three developmental trajectories of anxiety and depression symptoms (i.e., low-stable, decreasing, and increasing groups). Such inconsistent results may be due to the different cultural contexts these studies were based on, which highlights the value of investigating the developmental trajectories of anxiety problems during early childhood in diverse cultures. For example, China has the world's largest population in early childhood [10]. Especially after the release of the two-child policy in 2016 and the three-child policy in 2021, China is expecting an increased number of preschool-aged children (normally aged 3–6 years) in recent years. However, few research studies have investigated anxiety problems in Chinese preschool-aged children. This lack of longitudinal research, in particular, means we know little about the developmental trajectories of anxiety problems in Chinese preschool-aged children and the potential factors that may contribute to the emergence and continuity of early anxiety problems. To address this gap, this study investigated the developmental trajectories of anxiety problems during early childhood in a sample of young Chinese children to provide more evidence for anxiety development in early life from more cultural backgrounds.

Another limitation of existing studies of the developmental trajectories of anxiety problems during early childhood is that they used the overall level of child anxiety as outcomes, the results of which cannot reveal the developmental trajectories of specific anxiety symptoms during early childhood. This is an important limitation because the subtypes of anxiety symptoms (e.g., separation anxiety, specific fear, social anxiety, generalized anxiety) form in early childhood [11,12], and the developmental trajectories of different specific-symptom anxiety may vary [6,13]. According to the comprehensive developmental model of the continuity and change of anxiety symptoms proposed by Weems (2008) [14], maladaptive anxiety has two core features: (1) Dysregulation of the anxiety-response system and (2) distress/impairment resulting from the dysregulation and related negative emotions. These two core features are related to the common higher-order dimension of anxiety labelled as broad anxiety [15,16], which is expressed behaviorally, cognitively, and physiologically as a general tendency of avoidance, worry/rumination, and fear-associated somatic symptoms. In addition to the core features of anxiety, there are secondary features corresponding to the symptom clusters of the specific anxiety symptoms described in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5; [17]), such as fear of performances in social anxiety or excessive worry about day-to-day activities in generalized anxiety. Weem (2008) [14] suggested that, unlike the stability of the core features of anxiety, the secondary features of anxiety may shift according to the normative challenges in the different stages of child development. This theoretical hypothesis has been supported in school-aged samples. For example, symptoms of social anxiety have been found to remain stable or increase with age in school-age samples in response to the fear of negative evaluations by peers, in contrast to symptoms of specific fears and separation anxiety, which typically decrease across school years [18,19].

To our knowledge, the only study investigating the developmental trajectories of specific anxiety symptoms during early childhood was conducted by Battaglia and colleagues in 2016 [7]. They followed 1933 Canadian children from 1.5 to 6 years old and identified four trajectories of separation anxiety symptoms, including an unaffected low-persistent group (60.2%), a high-increasing group (6.9%), a high-decreasing group (10.8%), and a low-increasing group (22.1%) [7]. Despite that, little is known about the developmental trajectories of other specific anxiety symptoms (e.g., specific fear, social anxiety, and generalized anxiety) during early childhood. To address this gap, this study investigated the developmental trajectories of four common types of anxiety symptoms in early childhood including separation anxiety, specific fear, social anxiety, and generalized anxiety.

The other goal of this study was to identify the risk factors that may contribute to the emergence and continuity of early anxiety problems. Previous studies have identified parental anxious rearing behaviors as an important risk factor for child anxiety [20–23]. Defined as a form of parental controlling behaviors in relation to their excessive worry

and concern about children's safety and well-being, parental anxious rearing may increase children's threat perception, reduce children's perceived control over the threat, reinforce children's avoidant reactions, and limit children's independence and exposure to various situations [24,25], thereby increasing children's anxiety symptoms [26,27]. A recent study further suggested that maternal anxious rearing behaviors had a greater impact on children's anxiety symptoms than paternal anxious rearing behaviors, which may be due to the fact that mothers are always the primary caregivers of young children and spend more time interacting with children than fathers [28].

Despite the fact that the relationship between maternal anxious rearing behaviors and children's anxiety symptoms has been well-established, there are reasons to believe that this relationship may change over time. Previous studies have found that parental overprotective/overcontrolling behaviors may exert a greater influence on younger children than older children [29,30]. One possible explanation is that younger children depend more on their parents than older children. Therefore, parental overprotective/overcontrolling behaviors can reduce young children's exposure to novel and challenging situations, deprive them opportunities to practice coping abilities, and limit their development of independence and confidence, thereby increasing their anxiety symptoms. However, as children grow older, they can free themselves from the influence of parental overprotective/overcontrolling behaviors since the area of children's independent living from parents increases and they can take care of their own matters by themselves [23,31]. Investigating the potential fluctuations of the association between maternal rearing behaviors and children's specific anxiety symptoms over time can help us understand when maternal rearing behaviors influence which anxiety symptoms of children. However, to date, few studies have paid attention to this issue.

To address the above-mentioned research gaps, this three-wave longitudinal study followed 105 Chinese children aged 2–4 years and their mothers for three years to investigate (1) the developmental trajectories of four anxiety symptoms (i.e., separation anxiety, specific fear, social anxiety, and generalized anxiety) across early childhood and (2) the association between maternal anxious rearing behaviors and children's four specific anxiety symptoms (i.e., separation anxiety, specific fear, social anxiety, and generalized anxiety) concurrently and over time.

2. Method

2.1. Participant

Participants of this study were recruited by convenient sampling from three preschools in Shanxi, China. At T1, mothers of 132 children aged 2–4 years consented to participate and reported their child's anxiety symptoms and their own anxious rearing behaviors. One year later, parents of 111 children participated in the follow-up survey (T2) in which they reported their child's anxiety symptoms and their own anxious rearing behaviors again. Another year later, parents of 105 children who participated in the T1 and T2 surveys participated in the T3 survey, in which they reported their child's anxiety symptoms and their own anxious rearing behaviors a third time. The attrition rate was 8.33% from T1 to T2 and 5.41% from T2 to T3. No significant difference was found in demographic and study variables between the longitudinal sample and attrition sample. The average age of the 105 children whose mothers completed T1, T2, and T3 surveys was 3.45 ± 0.50 (55 girls, 50 boys) at T1. The average age of participating mothers at T1 was 32.37 ($SD = 5.30$), 61.0% of whom had a college degree or above. All participating children and mothers had never been diagnosed with any kind of anxiety symptoms before participating in the T1 survey.

2.2. Procedure

Ethics approval for this study was obtained from the Ethics Committee of the Faculty of Education, Beijing Normal University (Code: BNU202011100005, Date: 8 March 2020). All demographic and study variables in this study were measured with paper questionnaires. Accompanied by preschool teachers, experienced researchers issued informed

consent forms and questionnaires to parents when they picked up their children from the class. To ensure anonymity, participating parents were asked to complete the questionnaires within one week and return the questionnaires back to researchers in a sealed envelope. The first survey was conducted in December 2018 (T1). The second survey was conducted in December 2019 (T2), followed by a follow-up survey conducted one year later in December 2020 (T3). After gathering and screening all the returned questionnaires, researchers performed the subsequent data analysis in SPSS 21.0 and MPLUS 7.4.

2.3. Measure

2.3.1. Demographics

Mothers completed a demographic questionnaire at each time point to provide their age, educational level, family income, and child age and gender among other information. For the purposes of this study, demographic characteristics reported by mothers at T1 were used for data analysis.

2.3.2. Child Anxiety Symptoms

At T1, T2 and T3, mothers completed the Chinese version of the Spence Preschool Anxiety Scale (PAS) to rate the level of their child's anxiety symptoms on a 5-point scale, ranging from 1 (completely inconsistent) to 5 (completely consistent) [12,32]. To our knowledge, the PAS is the only measure specifically designed for assessing anxiety symptoms across multiple disorder subtypes in young children aged 3–7 years old. It is a parent-report scale including 28 items to measure five specific anxiety symptoms among young children: Separation anxiety, specific fear, social anxiety, obsessive-compulsive disorder, and generalized anxiety [12]. The mean scores of each subscale were calculated, with higher scores indicating a higher level of anxiety symptoms. However, we only analyzed the developmental trajectories of separation anxiety, specific fear, social anxiety, and generalized anxiety across time because obsessive-compulsive disorder is no longer classified as an 'anxiety disorder' in the DSM-5.

The Chinese version of the Spence Preschool Anxiety Scale (PAS) has been proven to be reliable and valid in Chinese preschool children [32]. In this study, the value of Cronbach's α for the subscales of separation anxiety, specific fear, social anxiety, and generalized anxiety were 0.70–0.91 at T1, 0.78–0.91 at T2, and 0.80–0.94 at T3, indicating acceptable internal consistency reliability of PAS at all three time points.

2.3.3. Maternal Anxious Rearing Behaviors

At T1, T2, and T3, mothers completed the Chinese version of the "Egna Minnen Beträffande Uppfostran" Questionnaire for parents (EMBU-P) [22,28] to report the frequency of their own anxious rearing behaviors (e.g., I am afraid that something bad might happen to my child) on a 4-point scale, ranging from 1 (never) to 4 (always). The EMBU-P included four sub-scales: Overprotection/control, emotional warmth, rejection, and anxious rearing. Considering the purpose of this study, only the 10-item anxious rearing sub-scale was used for data analysis [26]. The internal consistency of the anxious rearing sub-scale in this study was acceptable, with the value of Cronbach's $\alpha = 0.72$ at T1, 0.68 at T2, and 0.80 at T3. The mean score of 10 items was calculated, with higher scores indicating more maternal anxious rearing behaviors.

2.4. Data Analysis

Descriptive statistics and bivariate correlations among all study variables were first carried out in SPSS 21.0. To test the developmental trajectories of specific anxiety symptoms, we conducted latent growth curve modeling (LGCM) with Mplus 7.4 [33], which computes full information maximum likelihood estimates in the presence of missing data. LGCM allows for examining individual differences in changes over time, as well as examining what factors are associated with these changes [34]. In LGCM, repeated measures of the outcome construct (i.e., anxiety symptoms) serve as indicators of latent growth factors.

To ensure that a linear model was appropriate in our sample, latent growth models were first estimated for each of the four anxiety subscales with factor loadings from the slope factor for Time 1–Time 3 observed anxiety measures set at 0, 0.5, and 1 (a linear model) [35]. This step was performed because although polynomial growth models cannot be tested with only three time points, it is possible to model non-uniform growth specific to a given sample (i.e., non-equivalent rate of change from Time 1–Time 2 vs. Time 2–Time 3). The model is good when the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI) ≥ 0.90 (≥ 0.95 is ideal) and the Standardized Root Mean Square Residual (SRMR) ≤ 0.08 [36,37].

Then, we tested a linear model without the predictor (i.e., maternal anxious rearing behaviors) for each specific anxiety symptom (i.e., separation anxiety, specific fear, social anxiety, and generalized anxiety). The unweighted mean scores of the subscale of these four specific anxiety symptoms were used as observed variables in the model. The mean of the intercept in this model represents the average level of a specific anxiety symptom at baseline. The mean of the slope provides information about the average rate of change in a specific anxiety symptom across the three time points. The intercept variance in this model represents the individual difference of each specific anxiety symptom at the baseline. The slope variance represents the individual difference in the change rate. If the slope variance is significant, this means that not all individuals change at the same rate. In this case, growth mixture modelling was performed to identify latent classes of anxiety symptom trajectories with the full sample.

In addition, given our interest in the relationship between maternal anxious rearing behaviors and children's specific anxiety symptoms, we next tested models, separately for each specific anxiety symptom (separation anxiety, specific fear, social anxiety, and generalized anxiety), with maternal anxious rearing behaviors at each time point serving as the time-varying predictor of children's specific anxiety symptom.

It is worth noting that the PAS is a hierarchical measure of anxiety and the subscales are strongly correlated to each other due to the higher-order construct of broad anxiety. Therefore, a change in the score of a specific anxiety symptom cannot unambiguously be interpreted as a change in the construct of that specific anxiety symptom. Instead, due to the hierarchical structure, a change in the score of a specific anxiety symptom is largely accounted for by the change in the broad anxiety construct [38,39]. In other words, without accounting for other sources of anxiety, a real change in a specific dimension of anxiety can be suppressed [40]. Consequently, we needed to control for the effect of other sources of anxiety in our analyses. To do that, we created a latent factor labelled 'other anxiety' by summing all subscales other than the focused specific anxiety symptom. The 'other anxiety' variable was also centered and added at each time point serving as the time-varying covariate in the LGCM [6].

3. Results

Table 1 shows the correlations, means, and standard deviations for the four specific anxiety symptoms and maternal anxious rearing behaviors across three points. As expected, at each time point, the concurrent correlations among four specific anxiety symptoms were all positive and significant. Maternal anxious rearing behaviors were also significantly and positively related to each of the four specific anxiety symptoms.

Table 1. Means, standard deviations, and correlations among children's specific anxiety symptoms and maternal anxious rearing behaviors at T1, T2, and T3 (N = 105).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Separation anxiety															
1. Time 1	-														
2. Time 2	0.51 ***	-													
3. Time 3	0.38 ***	0.48 ***	-												
Special fear															
4. Time 1	0.26 ***	0.28 ***	0.25 *	-											
5. Time 2	0.38 ***	0.59 ***	0.29 **	0.20 *	-										
6. Time 3	0.31 ***	0.41 ***	0.66 ***	0.33 ***	0.41 ***	-									
Social anxiety															
7. Time 1	0.51 ***	0.42 ***	0.33 ***	0.22 *	0.36 ***	0.29 **	-								
8. Time 2	0.39 ***	0.64 ***	0.23 *	0.27 **	0.52 ***	0.25 *	0.45 ***	-							
9. Time 3	0.35 ***	0.43 ***	0.60 ***	0.17	0.33 ***	0.58 ***	0.41 ***	0.36 ***	-						
Generalized anxiety															
10. Time 1	0.62 ***	0.24 *	0.24 *	0.29 **	0.21 *	0.20 *	0.49 ***	0.20 *	0.28 **	-					
11. Time 2	0.45 ***	0.56 ***	0.26 **	0.32 ***	0.25 *	0.30 **	0.38 ***	0.41 ***	0.31 **	0.32 ***	-				
12. Time 3	0.39 ***	0.34 ***	0.51 ***	0.26 **	0.23 *	0.48 ***	0.30 **	0.31 ***	0.59 ***	0.42 ***	0.40 ***	-			
Maternal anxious rearing															
13. Time1	0.35 ***	0.17	0.18	0.78 ***	0.16	0.27 **	0.31 ***	0.25 *	0.09	0.39 ***	0.27 **	0.21 *	-		
14. Time2	0.35 ***	0.43 ***	0.23 *	0.47 ***	0.38 ***	0.18	0.28 **	0.32 ***	0.23 *	0.28 **	0.38 ***	0.31 ***	0.47 ***	-	
15. Time3	0.16	0.23 *	0.53 ***	0.44 ***	0.16	0.42 ***	0.19 *	0.10	0.44 ***	0.24 *	0.31 ***	0.44 ***	0.40 ***	0.40 ***	-
M	1.99	2.15	1.90	2.73	2.42	2.23	2.19	2.23	2.02	1.56	1.74	1.68	2.38	2.04	2.01
SD	0.77	0.85	0.76	0.43	0.81	0.92	0.77	0.83	0.79	0.76	0.72	0.82	0.51	0.48	0.50

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. M = Mean; SD = Standard Deviations.

3.1. Developmental Trajectories of Specific Anxiety Symptoms

As Table 2 shows, all models without predictors showed good model fit. The intercepts of all four models were significant, indicating that participants on average scored 2.00, 2.73, 2.24, and 1.72 on depressive feelings at baseline. The slope of special fear and social anxiety were both negative and significant, indicating that special fear and social anxiety decreased over time. However, the slopes of separation anxiety and generalized anxiety were not significant, indicating that separation anxiety and generalized anxiety remained stable over time. Neither the variance of intercepts nor the variance of the slope was significant, indicating that all four specific anxiety symptoms changed at the same rate in all participants. In this case, growth mixture modelling was not performed to identify latent classes of anxiety symptom trajectories with the full sample.

Table 2. Model fits, intercept, and slope of models without predictor (N = 105).

Outcomes	χ^2	df	CFI	TLI	SRMR	Intercept	Slope
Separation anxiety	12.11	7	0.98	0.96	0.049	2.00 ***	−0.071
Special anxiety	10.55	7	0.97	0.95	0.063	2.73 ***	−0.256 ***
Social anxiety	13.35	7	0.97	0.94	0.058	2.24 ***	−0.089 *
Generalized anxiety	15.92	7	0.96	0.91	0.047	1.72 ***	−0.037

Note. * $p < 0.05$, *** $p < 0.001$.

3.2. The Role of Maternal Anxious Rearing Behaviours

As Table 3 shows, all four models with maternal anxious rearing behaviors as a time-varying predictor showed a good model fit. Maternal anxious rearing behaviors were significantly and positively related to children's separation anxiety at T3 but not at T1 and T2, while the relationship between maternal anxious rearing behaviors and children's specific fear was significant at T1 and T2 but not at T3. Maternal anxious rearing behaviors were unrelated to social anxiety and generalized anxiety at any time point.

Table 3. Maternal anxious rearing behaviors as predictors of four specific anxiety symptoms (N = 105).

Outcomes	χ^2	df	CFI	TLI	SRMR	β Time 1	β Time 2	β Time 3
Separation anxiety	20.23	13	0.97	0.95	0.039	0.046	0.080	0.271 ***
Special anxiety	24.37	13	0.95	0.91	0.049	0.770 ***	0.232 ***	0.067
Social anxiety	15.06	13	0.99	0.99	0.042	−0.048	0.088	0.079
Generalized anxiety	19.21	13	0.97	0.94	0.035	0.011	0.13	−0.018

Note. *** $p < 0.001$. β Time 1–3: Regression coefficient of maternal anxious rearing behaviors on specific anxiety symptoms at Time 1, 2 and 3.

4. Discussion

This study tested the developmental trajectories of four specific anxiety symptoms (i.e., separation anxiety, special fear, social anxiety, generalized anxiety) during early childhood, as well as the relation between maternal anxious rearing behaviors and children's specific anxiety symptoms over time. Following 105 Chinese children aged 2–4 years and their mothers for three years, we found that the developmental trajectories of different specific anxiety symptoms vary. Such results were in line with previous findings in school-aged children [6], indicating that unlike the core features of anxiety (i.e., dysregulation and distress/impairment), secondary features corresponding to the symptom clusters of the specific anxiety symptoms may shift according to the normative challenges in the different stages of child development [14]. Therefore, it would be valuable to explain the developmental trajectories of specific anxiety symptoms based on the normative challenges at different stages of early childhood, as well as children's learning and living circumstances in specific cultural contexts (i.e., the Chinese context in this study).

More specifically, our finding indicates that separation anxiety did not change significantly over time, which was consistent with the findings of Battaglia et al. (2016) [7]

in which separation anxiety showed a low-persistent trajectory from 1.5 to 6 years old in the majority of children in their sample (60.2%). However, because of the limited sample size of this study, we did not find the other latent classes of trajectories of separation anxiety identified by Battaglia et al. (2016) [7]. We also found that the relationship between maternal anxious rearing behaviors and children's separation anxiety was only significant at T3 but not at T1 and T2. Inconsistent with the study hypothesis, one possible explanation for this finding is that when children were younger at T1 and T2, they need more protection from their mothers. Maternal anxious rearing behaviors characterized as overprotection, as a result, may be taken for granted in younger children and have less impact on their symptoms of separation anxiety. However, as children grow up and reach T3, they need more autonomy to explore their surroundings and practice coping abilities to develop confidence and independence. From this perspective, if a mother fails to fulfil the child's need for autonomy and appears to be overprotective instead, the child may not be able to develop confidence and independence, thereby being more susceptible to separation anxiety [41].

Special fear was found to significantly decrease across the three time points, which was consistent with the findings of previous studies in school-aged children [18,19]. Research shows that elevated anxiety symptoms are normally caused by the overestimation of threat and underestimation of coping ability [42–44]. It is possible that the threats from the physical environment described in the special fear in the PAS (e.g., darkness/insects/height) are much more threatening for 2–4-year-old children at T1 who have not learned enough coping skills. However, as children grow up, they are exposed to more novel and challenging physical environments in the family, preschool, and other contexts where they can learn more coping skills and become more confident about their coping abilities. Their fear of the physical environment (i.e., special fear), thus, may decrease year by year. We also found that the relationship between maternal anxious rearing behaviors and children's special fear was significant at T1 and T2 but not at T3. Consistent with the previous study, this finding may be due to the increased opportunities for older children to engage in various activities in preschools or other contexts without the presence of mothers, in which they can explore novel and challenging physical environments and practice coping skills without being overprotected by their mothers [23,31].

Social anxiety also showed a decreasing trend across the three time points, which may be due to the life transition faced by children at 2–4 years old in China [32]. Most Chinese children enter preschool and start a new period in their life at age 2–4 years when they need to leave their parents for the first time and adjust to the new social environment in the preschool by themselves (e.g., new teachers and other children). Thus, children may show more symptoms of social anxiety as a response to this transition. However, as children finish the first year of preschool and enter the second and third years, they may have become familiar with the social environment in the preschool and have learned more social interaction skills to cope with challenges in social life. Their symptoms of social anxiety, as a result, may slowly decrease. Our findings also indicated that maternal anxious rearing behaviors showed no significant relation with children's social anxiety at all three time points. One possible explanation is that children become involved in most social activities in preschools without the presence of mothers. Maternal parenting behaviors, as a result, may have a limited impact on children's social anxiety symptoms.

Generalized anxiety showed no significant change over time in this study. The relationship between maternal anxious rearing behaviors and children's generalized anxiety at all three time points was not significant either. One possible explanation is that the generalized anxiety subscale of the PAS focuses on children's symptoms of worrying, which is an internal cognitive experience that is difficult for young children to describe with limited language abilities (e.g., "Has difficulty stopping themselves from worrying" and "Has bad or silly thoughts or images that keep coming back over and over") [45]. As a result, it may be difficult for mothers to observe young children's symptoms of generalized anxiety [11], which may lead to the generally low scores of generalized anxiety symptoms reported by

mothers at all time points and impede our detection of the change in generalized anxiety over time and the relationship between maternal anxious rearing behaviors and children's generalized anxiety at different time points.

5. Limitations and Future Studies

This study has some limitations. First, only linear anxiety symptom trajectories could be examined because data were collected at only three time points. Although our linear models fitted the data well, it is possible that quadratic or cubic growth trajectories may have provided further improvements upon model fit. Future studies would benefit from including four or more data collection periods, as well as longer follow-up intervals to examine long-term anxiety symptom trajectories. Second, the sample size of this study was too small to identify the latent classes of developmental trajectories of specific anxiety symptoms in Chinese young children. Previous studies have found heterogeneity in the developmental trajectories of anxiety in childhood, which indicated the existence of different classes of developmental trajectories of anxiety [13]. Future studies with larger samples are needed to investigate the latent classes of developmental trajectories of specific anxiety symptoms during early childhood. In addition, all the results of this study were drawn from a nonclinical sample in which all participating children and mothers had never been diagnosed with any kind of anxiety symptoms before the survey. Previous studies have shown that the developmental trajectories of anxiety symptoms may be influenced by children's anxiety levels at baseline [38]. The results of this study, therefore, cannot be applied to clinical samples. Future studies are recommended to include both non-clinical and clinical samples to investigate the developmental trajectories of specific anxiety symptoms during early childhood in a diverse population. In addition, children's anxiety symptoms in this study were only reported by mothers, the results of which may be influenced by mothers' anxious cognitive bias [46,47]. Future studies are recommended to include child anxiety measures reported by different informants (e.g., children themselves or independent assessors) to overcome this limitation.

6. Implications

Despite these limitations, this study makes several contributions to the literature and has clinical implications. Specifically, this study is the first to provide a description of the developmental trajectories of various specific anxiety symptoms during early childhood in the Chinese context, which extends the comprehensive developmental model of the continuity and change of anxiety symptoms found in school-aged children to younger children and different cultural background, and highlights how the development of the secondary features of anxiety problems are associated with the normative challenges at different stages of child development and children's learning and living circumstances in a specific cultural context. Moreover, although previous studies have demonstrated the relation between maternal anxious rearing behaviors and children's anxiety problems in early childhood, this study further reveals that maternal anxious rearing behaviors may have different relations with different specific anxiety symptoms, and the relation between maternal anxious rearing behaviors and one specific anxiety symptom (i.e., separation anxiety and special fear) may vary over time. These results provide new directions for future studies to investigate how parenting behaviors may relate to different specific anxiety symptoms at different stages of child development. In practice, by discussing the association between the developmental trajectories of early anxiety and the normative challenges at different stages of early development, this study suggests the importance of the engagement of various activities that enable children to explore novel and challenging situations, practice coping abilities, and develop confidence and independence. As the main learning and living circumstances of young children, families and early education institutions should provide children with more such activities. Mothers especially should be less overprotective and give children more autonomy and encouragement to involve themselves in such activities.

Author Contributions: Conceptualization, X.L.; Methodology, S.Z.; Formal analysis, S.Z.; Investigation, S.Z.; Data curation, S.Z.; Writing—original draft, S.Z.; Writing—review & editing, X.L.; Supervision, X.L.; Project administration, X.L.; Funding acquisition, X.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Beijing Normal University, The International Joint Research Project of Faculty of Education, No. ICER202202.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Ethics Committee of the Faculty of Education, Beijing Normal University (protocol code: BNU202011100005, date of approval: 8 March 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Vasileva, M.; Graf, R.K.; Reinelt, T.; Petermann, U.; Petermann, F. Research review: A meta-analysis of the international prevalence and comorbidity of mental disorders in children between 1 and 7 years. *J. Child Psychol. Psychiatry Allied Discip.* **2021**, *62*, 372–381. [CrossRef] [PubMed]
2. Dougherty, L.R.; Tolep, M.R.; Bufferd, S.J.; Olino, T.M.; Dyson, M.; Traditi, J.; Rose, S.; Carlson, G.A.; Klein, D.N. Preschool anxiety disorders: Comprehensive assessment of clinical, demographic, temperamental, familial, and life stress correlates. *J. Clin. Child Adolesc. Psychol.* **2013**, *42*, 577–589. [CrossRef] [PubMed]
3. Franz, L.; Angold, A.; Copeland, W.; Costello, E.J.; Towse-Goodman, N.; Egger, H. Preschool Anxiety Disorders in Pediatric Primary Care: Prevalence and Comorbidity. *J. Am. Acad. Child Adolesc. Psychiatry* **2013**, *52*, 1294–1303. [CrossRef]
4. Bufferd, S.J.; Dougherty, L.R.; Carlson, G.A.; Rose, S.; Klein, D.N. Psychiatric disorders in preschoolers: Continuity from ages 3 to 6. *Am. J. Psychiatry* **2012**, *169*, 1157–1164. [CrossRef]
5. Lavigne, J.V.; Hopkins, J.; Gouze, K.R.; Bryant, F.B. Bidirectional influences of anxiety and depression in young children. *J. Abnorm. Child Psychol.* **2015**, *43*, 163–176. [CrossRef] [PubMed]
6. Ahlen, J.; Ghaderi, A. Dimension-specific symptom patterns in trajectories of broad anxiety: A longitudinal prospective study in school-aged children. *Dev. Psychopathol.* **2019**, *32*, 31–41. [CrossRef]
7. Battaglia, M.; Touchette, É.; Garon-Carrier, G.; Dionne, G.; Côté, S.M.; Vitaro, F.; Tremblay, R.E.; Boivin, M. Distinct trajectories of separation anxiety in the preschool years: Persistence at school entry and early-life associated factors. *J. Child Psychol. Psychiatry* **2016**, *57*, 39–46. [CrossRef]
8. Kertz, S.J.; Sylvester, C.; Tillman, R.; Luby, J.L. Latent class profiles of anxiety symptom trajectories from preschool through school age. *J. Clin. Child Adolesc. Psychol.* **2019**, *48*, 316–331. [CrossRef]
9. de Lijster, J.M.; Dries, M.A.V.D.; van der Ende, J.; Utens, E.M.; Jaddoe, V.W.; Dieleman, G.C.; Hillegers, M.H.; Tiemeier, H.; Legerstee, J.S. Developmental trajectories of anxiety and depression symptoms from early to middle childhood: A population-based cohort study in the Netherlands. *J. Abnorm. Child Psychol.* **2019**, *47*, 1785–1798. [CrossRef]
10. National Bureau of Statistics of China. Communiqué of the Seventh National Population Census. 2021. Available online: http://www.gov.cn/guoqing/2021-05/13/content_5606149.htm (accessed on 10 November 2022).
11. Edwards, S.L.; Rapee, R.M.; Kennedy, S.J.; Spence, S.H. The Assessment of Anxiety Symptoms in Preschool-Aged Children: The Revised Preschool Anxiety Scale. *J. Clin. Child Adolesc. Psychol.* **2010**, *39*, 400–409. [CrossRef]
12. Spence, S.H.; Rapee, R.; McDonald, C.; Ingram, M. The structure of anxiety symptoms among preschoolers. *Behav. Res. Ther.* **2001**, *39*, 1293–1316. [CrossRef] [PubMed]
13. Broeren, S.; Muris, P.E.H.M.; Diamantopoulou, S.; Baker, J. The course of childhood anxiety symptoms: Developmental trajectories and child-related factors in normal children. *J. Abnorm. Child Psychol.* **2013**, *41*, 81–95. [CrossRef] [PubMed]
14. Weems, C.F. Developmental trajectories of childhood anxiety: Identifying continuity and change in anxious emotion. *Dev. Rev.* **2008**, *28*, 488–502. [CrossRef]
15. Ebesutani, C.; Reise, S.P.; Chorpita, B.F.; Ale, C.; Regan, J.; Young, J.; Higa-McMillan, C.; Weisz, J.R. The revised child anxiety and depression scale—short version: Scale reduction via exploratory bifactor modeling of the broad anxiety factor. *Psychol. Assess.* **2012**, *24*, 833–845. [CrossRef] [PubMed]
16. Watson, D. Rethinking the mood and anxiety disorders: A quantitative hierarchical model for DSM-V. *J. Abnorm. Psychol.* **2005**, *114*, 522–536. [CrossRef]
17. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed.; American Psychiatric Association: Washington, DC, USA, 2013.
18. Hale, W.W.; Raaijmakers, Q.; Muris, P.; Meeus, W. Developmental trajectories of adolescent anxiety disorder symptoms: A 5-year prospective community study. *J. Am. Acad. Child Adolesc. Psychiatry* **2008**, *47*, 556–564. [CrossRef]

19. Westenberg, P.M.; Gullone, E.; Bokhorst, C.L.; Heyne, D.A.; King, N.J. Social evaluation fear in childhood and adolescence: Normative developmental course and continuity of individual differences. *Br. J. Dev. Psychol.* **2007**, *25*, 471–483. [\[CrossRef\]](#)
20. Grüner, K.; Muris, P.; Merckelbach, H. The relationship between anxious rearing behaviours and anxiety disorders symptomatology in normal children. *J. Behav. Ther. Exp. Psychiatry* **1999**, *30*, 27–35. [\[CrossRef\]](#)
21. Muris, P.; Merckelbach, H. Perceived parental rearing behaviour and anxiety disorders symptoms in normal children. *Personal. Individ. Differ.* **1998**, *25*, 1199–1206. [\[CrossRef\]](#)
22. Muris, P.; Meesters, C.; Brakel, A.V. Assessment of Anxious Rearing Behaviors with a Modified Version of “Egna Minnen Beträffande Uppfostran” Questionnaire for Children. *J. Psychopathol. Behav. Assess.* **2003**, *25*, 229–237. [\[CrossRef\]](#)
23. Zimmer-Gembeck, M.J.; Collins, W.A. Autonomy development during adolescence. In *Blackwell Handbooks of Developmental Psychology*; Adams, G.R., Berzonsky, M.D., Eds.; Blackwell Publishing: Hoboken, NJ, USA, 2003; pp. 175–204.
24. Aktar, E.; Nikoli, M.; Bgels, S.M. Environmental transmission of generalized anxiety disorder from parents to children: Worries, experiential avoidance, and intolerance of uncertainty. *Dialogues Clin. Neuroence* **2017**, *19*, 137–147. [\[CrossRef\]](#) [\[PubMed\]](#)
25. Van der Bruggen, C.O.; Stams, G.J.J.M.; Bögels, S.M. The relation between child and parent anxiety and parental control: A meta-analytic review. *J. Child Psychol. Psychiatry* **2008**, *49*, 1257–1269. [\[CrossRef\]](#) [\[PubMed\]](#)
26. Affrunti, N.W.; Woodruff-Borden, J. The roles of anxious rearing, negative affect, and effortful control in a model of risk for child perfectionism. *J. Child Fam. Stud.* **2017**, *26*, 2547–2555. [\[CrossRef\]](#)
27. Waters, A.M.; Zimmer-Gembeck, M.J.; Farrell, L.J. The relationships of child and parent factors with children’s anxiety symptoms: Parental anxious rearing as a mediator. *J. Anxiety Disord.* **2012**, *26*, 734–745. [\[CrossRef\]](#)
28. Zhou, S.Y.; Li, X.W. Maternal and Paternal Worry, Anxious Rearing Behaviors, and Child Anxiety During the Preschool Years. *J. Fam. Psychol.* **2022**, *36*, 468–478. [\[CrossRef\]](#)
29. Chyung, Y.J.; Lee, Y.A.; Ahn, S.J.; Bang, H.S. Associations of perceived parental psychological control with depression, anxiety in children and adolescents: A meta-analysis. *Marriage Fam. Rev.* **2022**, *58*, 158–197. [\[CrossRef\]](#)
30. Connell, A.M.; Goodman, S.H. The association between psychopathology in fathers versus mothers and children’s internalizing and externalizing behavior problems: A meta-analysis. *Psychol. Bull.* **2002**, *128*, 746–770. [\[CrossRef\]](#)
31. Allen, J.P.; Hauser, S.T.; Bell, K.L.; O’Connor, T.G. Longitudinal assessment of autonomy and relatedness in adolescent-family interactions as predictors of adolescent ego development and self-esteem. *Child Dev.* **1994**, *65*, 179–219. [\[CrossRef\]](#)
32. Wang, M.F.; Zhao, J. Anxiety disorder symptoms in Chinese preschool children. *Child Psychiatry Hum. Dev.* **2015**, *46*, 158–166. [\[CrossRef\]](#)
33. Muthén, L.K.; Muthén, B.O. *Mplus User’s Guide*, 8th ed.; Muthén & Muthén: Los Angeles, CA, USA, 2017.
34. Cheong, J.; MacKinnon, D.P.; Khoo, S.T. Investigation of mediational processes using parallel process latent growth curve modeling. *Struct. Equ. Model.* **2003**, *10*, 238–262. [\[CrossRef\]](#)
35. Jung, T.; Wickrama, K. An introduction to latent class growth analysis and growth mixture modeling. *Soc. Personal. Psychol. Compass* **2008**, *2*, 302–317. [\[CrossRef\]](#)
36. Hu, L.T.; Bentler, P.M. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct. Equ. Model.* **1999**, *6*, 1–55. [\[CrossRef\]](#)
37. Kline, R.B. *Principles and Practice of Structural Equation Modeling*, 3rd ed.; Guilford Press: New York, NY, USA, 2010.
38. Ahlen, J.; Hursti, T.; Tanner, L.; Tokay, Z.; Ghaderi, A. Prevention of anxiety and depression in Swedish school children: A Cluster-randomized effectiveness study. *Prev. Sci.* **2018**, *19*, 147–158. [\[CrossRef\]](#) [\[PubMed\]](#)
39. Reise, S.P. The rediscovery of bifactor measurement models. *Multivar. Behav. Res.* **2012**, *47*, 667–696. [\[CrossRef\]](#) [\[PubMed\]](#)
40. Weems, C.F.; Graham, R.A.; Scott, B.G.; Banks, D.M.; Russell, J.D. Suppressor effects and age differences in the expression of anxious emotion. *Personal. Individ. Differ.* **2013**, *55*, 283–287. [\[CrossRef\]](#)
41. Sirois, M.S.; Bernier, A.; Gagné, C.M.; Mageau, G.A. Early maternal autonomy support as a predictor of child internalizing and externalizing behavior trajectories across early childhood. *Soc. Dev.* **2022**, *31*, 883–899. [\[CrossRef\]](#)
42. Creswell, C.; Cooper, P.; Murray, L. Intergenerational transmission of anxious information processing biases. In *Information Processing Biases and Anxiety: A Developmental Perspective*; Hadwin, J.A., Field, A.P., Eds.; John Wiley and Sons: Hoboken, NJ, USA, 2010; pp. 280–295.
43. Field, A.P.; Lester, K.J. Learning of information processing biases in anxious children and adolescents. In *Information Processing Biases and Anxiety: A Developmental Perspective*; John Wiley and Sons: Hoboken, NJ, USA, 2010; pp. 253–278.
44. Wheatcroft, R.; Creswell, C. Parents’ cognitions and expectations about their pre-school children: The contribution of parental anxiety and child anxiety. *Br. J. Dev. Psychol.* **2007**, *25*, 435–441. [\[CrossRef\]](#)
45. Warren, S.L.; Umylny, P.; Aron, E.; Simmens, S.J. Toddler anxiety disorders: A pilot study. *J. Am. Acad. Child Adolesc. Psychiatry* **2006**, *45*, 859–866. [\[CrossRef\]](#)
46. Bögels, S.M.; Melick, M. The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviors and anxiety in children and parents. *Personal. Individ. Differ.* **2004**, *37*, 1583–1596. [\[CrossRef\]](#)
47. Francis, S.E. The role of parental anxiety sensitivity in parent reports of child anxiety in treatment seeking families. *Clin. Child Psychol. Psychiatry* **2014**, *19*, 111–124. [\[CrossRef\]](#)