



Early material parenting and adolescents' materialism: the mediating role of overt narcissism

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Abstract

Although material parenting is a very common parenting style in China, it has received little attention from researchers, and thus far, only one study has demonstrated that early material parenting fosters materialism in adulthood. However, whether early material parenting promotes materialism in adolescents remains unknown. Therefore, this research aimed to examine the relationship between material parenting and materialism and the underlying mechanisms among Chinese adolescents by conducting two retrospective surveys. A pilot study was first designed to test the recall bias and parent-child rating agreement on a small sample of child-parent dyads ($N = 222$) using a pairing questionnaire. The results showed that there was no significant systematic error that may affect the relationship between the variables and revealed a high rating agreement between children and parents on material parenting. Then, a formal study investigated the relationship between material parenting and materialism among a larger sample of adolescents ($N = 1173$) and examined the mediating role of overt narcissism. We found that both conditional material rewards and unconditional material rewards positively predicted materialism, and overt narcissism played a mediating role in the relationship. Our findings indicate that early material parenting may lead to children's overt narcissism and subsequently foster their materialistic values in adolescence.

Keywords Material parenting · Materialism · Overt narcissism · Adolescents

Introduction

With the rapid development of China's economy and the continuous improvement of population living standards, more attention has been given to the upbringing of children, and material parenting has become a common phenomenon in China. The latter is based on parents' use of material goods to express love or shape children's behavior. In China, people's working style has changed drastically, and the 996 working mode has become the norm, which means working 6 days a week, starting at 9 am, and ending at 9 pm. Young parents

have difficulty balancing work and family, and they usually spend less time with their children than they do at work; therefore, they tend to compensate their children with material things. In addition, it is worth noting that there is a special group of people in most of China's rural areas: left-behind children, whose parents usually go far away from home to work to earn more money to support the family and are unable to accompany them. Thus, these left-behind children often receive material compensation from their parents. However, some children who have been raised with the use of material rewards or punishments tend to become materialists or money worshipers when they grow up, which can be seen as a failure of family education. A previous study by Richins and Chaplin (2015) showed that early material parenting fosters materialism in adulthood. However, whether early material parenting promotes adolescents' materialism remains unknown. Materialism is a value that emphasizes material wealth as the center of life, the source of happiness, and the criterion for success (Richins & Dawson, 1992). It is worth noting that the existing research results show that in the long term, materialism has many adverse effects on teenagers, such as low self-esteem, anxiety and depression, low life satisfaction and well-being, a negative attitude toward school, a lack of intrinsic

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motivation for learning, poor academic performance, compulsive buying, and being self-centered and indifferent to social responsibility (see reviews, Jiang et al., 2016; Kasser, 2016). Teenagers are in the critical period of forming their values. They should be guided in the process of growth, and family education plays an important role in that. In view of the fact that material parenting prevails in China, this study examined the relationship between early material parenting and materialism and the related psychological mechanisms among Chinese adolescents.

Material Parenting and Materialism

Material parenting, first proposed by Richins and Chaplin (2015), refers to parents using material goods to express their love or shape their children's behavior. It encompasses three components. The first, *conditional material rewards*, refers to giving the child money or material goods as a reward for his or her accomplishments or good behavior (Richins & Chaplin, 2015). For example, parents buy toys for the child after he or she obtains a high score on an exam. The second, *unconditional material rewards*, involves giving the children desired items without them having to fulfill any specific requirements (Richins & Chaplin, 2015). For example, when a child is crying for a toy, the parents immediately satisfy his or her wish. This parenting style is similar to the indulgent parenting style proposed by Baumrind (1991); that is, parents do not make any requirements for their children, but they give them positive support, express affirmative feelings toward them, and meet all their demands. Unconditional material rewards reflect parents' selfless care for their children. This kind of love stems from parents' attention to their children, which can be seen everywhere in Chinese families, especially in families with only one child (Zhang, 2012). In addition, it can be attributed to parents' compensation psychology; especially when they work away from home for extended periods of time and have little time to spend with their children, they tend to provide their children with material compensation (Bernardo et al., 2018). In China, many parents were born in a time of material scarcity. To make up for that, they often try to provide a wealthy future for the next generation (Chan et al., 2006). The third, *material punishments*, signifies taking a valued possession from the child, either temporarily or permanently, as a consequence of his or her error or failure (Richins & Chaplin, 2015). For example, when a child does something wrong, the parents temporarily confiscate the child's toy.

Regarding the relationship between material parenting and materialism, only Richins and Chaplin (2015) conducted a retrospective survey. Adult participants were asked to recall the material rewards, unconditional material rewards, and material punishments received from their parents when they were in grades 3, 7 and 10, and their current levels of

materialism were measured as well. The results showed that the three components of material parenting were all positively related to materialism. That is, the children who were subject to material parenting were more likely to be materialistic in adulthood.

Overt Narcissism as a Possible Mediating Variable

Regarding the psychological mechanism underlying the influence of material parenting on future materialism, only Richins and Chaplin (2015) confirmed the mediating role of self-transformation expectations, but they pointed out that other plausible mechanisms, such as narcissism, should also be examined. Personality and social psychologists tend to view narcissism as a personality trait characterized by an exaggerated sense of self-importance, an unreasonable sense of entitlement, and a craving for admiration (Raskin & Terry, 1988). Subsequently, two types of narcissism were identified: overt narcissism and covert narcissism (Miller & Campbell, 2008; Pincus & Lukowitsky, 2010; Wink, 1991). The former is associated with self-exaggeration, a constant need for others' positive attention, exaggerated performance and self-presentation, which is also called grandiose narcissism. The latter is characterized by low self-esteem, sensitivity to the evaluation of others, and high anxiety and insecurity, which is also called vulnerable narcissism (Miller et al., 2011; Wink, 1991). With the growing interest of researchers in this topic, the causes of narcissism are constantly being revealed, such as cultural context (Campbell et al., 2002; Foster et al., 2003) and parenting style (e.g., Cramer, 2015). It is worth noting that covert narcissism is more likely to be a pathological form of narcissism (Pincus et al., 2009; Wink, 1992; Wink et al., 2005). Because this research focused on a nonclinical sample, we only examined the mediator of overt narcissism.

First, conditional material rewards or material punishments may convey that the parents' concern for the children is conditional because only when they perform well will they receive material rewards; otherwise, they will be punished accordingly. Research has found that conditional concern can positively predict adolescents' narcissistic perfectionism (Curran et al., 2017). One explanation could be that children pursue perfection in order to be accepted by their parents, and they even worry that "I will not be loved unless I am perfect and omnipotent", which may develop defensive arrogance and form a narcissistic personality (Kernberg, 1975). In terms of unconditional material rewards, applying them too frequently may be viewed as a kind of indulgence to the children. Following the theory of social learning, Millon and Everly (1985) proposed that there is a relationship between doting parents and children's narcissism. Parents' doting behavior may enable the children to acquire the self-cognition that "I am superior and can enjoy special treatment without effort or good behavior". Therefore, the unconditional material

rewards that can be obtained without individual effort may lead to the acquisition of a sense of superiority and privilege, which are the main characteristics of overt narcissism.

Second, previous studies have found that materialism plays a mediating role between narcissism and compulsive buying (Rose, 2007), as well as between narcissism and the purchase intention of counterfeit luxury goods (Hao & Lu, 2017), which indicates that narcissists tend to be more materialistic.

Finally, the path leading from material parenting to narcissism and subsequently to adolescents' materialism is also worthy of exploration. First, adolescence is an important period for the formation of self-concept. As an extension of the self, property helps adolescents better manage their identity (Belk, 1988). Material parenting gives children access to a large number of objects, which may cause them to use material goods to construct the self-concept and develop friendships in the process of self-concept development. Children who have more access to material goods in their lives are more likely to rely on tangible material resources in their developmental tasks (Richins, 2011). As mentioned above, early material parenting may promote a child's narcissistic tendency. At the same time, in the process of peer interaction, if an individual tends to use the property obtained from his or her parents to gain his peer's attention, appreciation and some privileges in the group, it may also increase his or her narcissistic tendency, and such "trading" will also make narcissists think that property can bring success, status, and happiness, thus developing materialistic values. In addition, according to the dynamic self-regulation model of narcissism, narcissists need to constantly seek recognition and praise from the outside world. In social relationships, they can construct or maintain an idealized self (Morf & Rhodewalt, 2001). Since early material parenting may lead to a child's narcissistic tendency, to maintain this narcissistic state, the child needs to constantly use material properties to attract others' attention and gain their respect (Campbell et al., 2002). This process is similar to the pattern of addiction (Baumeister & Vohs, 2001). Therefore, as a result, narcissistic individuals tend to associate property with success and happiness, forming materialistic tendencies.

The Current Study

Based on the above literature review, it is suggested that the existing research needs to be further strengthened. First, there is very little research on the relationship between material parenting and materialism. Only Richins and Chaplin (2015) found that conditional/unconditional material rewards and material punishments in childhood all positively predicted materialism in adulthood in America. Whether this result can be applied to adolescents in non-Western countries remains to be tested. Second, although Richins and Chaplin (2015) have pointed out that narcissism may be the mediating

mechanism underlying the influence of material parenting on materialism, there is still a lack of empirical evidence in this regard.

Considering these limitations, this research aimed to explore the relationship between early material parenting and materialism, as well as the mediating role of overt narcissism in Chinese adolescents. It is worth noting that the retrospective survey was used to measure early material parenting in our studies, and all memories are subject to perceptual biases or fragmentary loss due to the passage of time. If the group of highly materialistic adolescents recalled more material parenting than actually occurred, the relationship between the variables would be affected, so it was necessary to assess whether this recall bias was a significant concern for research on this topic (Richins & Chaplin, 2015). In addition, material parenting is the behavior of parents, and the material parenting recalled by adolescents might not be consistent with that reported by their parents; thus, it was also necessary to test the rating consistency between parents and their children. Only by solving these two problems is it meaningful to carry out retrospective research on material parenting among adolescents. Therefore, we first conducted a pilot study in which pairs of teenagers and their parents were investigated by paired questionnaires to test recall bias and rating agreement, and we preliminarily investigated the relationship between early material parenting and adolescents' materialism. In the formal study, a large sample questionnaire survey was conducted among middle school students to further examine the mediating role of overt narcissism between material parenting and materialism.

We hypothesized that there would be a positive relationship between early material parenting and adolescents' materialism, and that overt narcissism would play a mediating role in this relationship.

The Pilot Study

The pilot study aimed to test whether there was obvious recall bias in the retrospective data and whether parent and child ratings on material parenting were consistent. In addition, the relationship between early material parenting and adolescents' materialism was preliminarily explored.

Method

Participants and Procedures

The participants included 250 adolescents recruited from two junior high schools, one in Central China and another in Southwest China. To test the scoring consistency of parents and children in material parenting measures, we also invited the parents to complete paired questionnaires. After the removal

of data from 28 participants whose parents failed to finish the questionnaires, 222 student-parent matching questionnaires were obtained. In the student sample, 44.1% were boys; 54.5% were an only child; 51.4% were in the first grade, 26.1% were in the second grade, and 22.5% were in the third grade; and 39.6% lived in cities, and 60.4% lived in towns and villages. The average age of the students was 12.96 years ($SD = 0.94$).

This study was approved by the researcher's institutional ethics committee. The school administrators' permission to conduct the survey was first obtained. Informed consent was then obtained from the teachers and parents at the parents' meeting. All adolescents were tested during regular school hours in their classrooms. After the students finished the questionnaires, they were told to take another sheet of questionnaires home after school for one parent to fill out and to bring them back the next day. After the survey, each student received a piece of candy as a token of appreciation.

Measures

Material parenting reported by students The material parenting questionnaire developed by Richins and Chaplin (2015) was translated into Chinese, and several items were modified to adapt to the Chinese cultural context. More specifically, we selected three items from the original conditional material rewards subscale, including "my parents would take me out for a food treat", "my parents would buy something nice for me", and "my parents would give me money as a reward". The unconditional material rewards subscale developed by Richins and Chaplin (2015) contained only one item. To ensure the reliability of this subscale, we expanded the original scale by adding two items: "My [mother/father] often bought me a lot of delicious food without any conditions", and "when I am short of money, I just ask my [mother/father] for it and [she/he] always gives it to me". For the material punishment subscale, two original items were used in our research, including "some of my [toys/stuff/things] would be taken away temporarily or permanently", and "my parents would reduce my allowance". Referring to Richins and Chaplin's study (Richins & Chaplin, 2015), since the current research investigated material parenting in childhood and early adolescence, the questionnaire was supplemented with reminders that the questions referred to primary and secondary school periods. Sample items included: "When I was in [primary/secondary] school, if I had a positive accomplishment or did something difficult that my parents really wanted me to do, my parents would buy something nice for me" (conditional material rewards), "When I was in [primary/secondary] school, my [mother/father] often bought things for me just because I wanted them" (unconditional material rewards), and "When I was in [primary/secondary] school, if I misbehaved or got into trouble at home in a pretty serious way, some of my [toys/stuff/things] would be taken away temporarily or permanently" (material punishments). Consistent

with Richins and Chaplin's measure (Richins & Chaplin, 2015), participants responded on a 4-point Likert scale (1 = very unlikely, 4 = very likely) for the subscales of conditional material rewards and material punishments, and on a 5-point Likert scale (1 = almost never, 5 = almost always) for the subscale of unconditional material rewards. The item scores were averaged to create the total scale scores, and a higher score represented more material parenting. As the participants responded to the same set of items twice (once for childhood and once for early adolescence), we computed Cronbach's α values of the total scale and three subscales for the two periods: for childhood, the total scale ($\alpha = 0.77$), conditional material rewards subscale ($\alpha = 0.77$), unconditional material rewards subscale ($\alpha = 0.81$), and material punishments subscale ($\alpha = 0.73$); and for early adolescence, the total scale ($\alpha = 0.80$), conditional material rewards subscale ($\alpha = 0.81$), unconditional material rewards subscale ($\alpha = 0.84$), and material punishments subscale ($\alpha = 0.79$).

Material parenting reported by parents The parent version of the material parenting questionnaire was almost the same as the student survey, with minor changes to wording as needed. For example, the item "When I was in primary school, if I got good grades, my parents would buy me something I'd been wanting" was changed to "When my child was in primary school, if he/she got good grades, I would buy him/her something he/she had always wanted". The Cronbach's α values of the total scale and three subscales for childhood and early adolescence were as follows: for childhood, the total scale ($\alpha = 0.80$), conditional material rewards subscale ($\alpha = 0.74$), unconditional material rewards subscale ($\alpha = 0.85$), and material punishments subscale ($\alpha = 0.80$); and for early adolescence, the total scale ($\alpha = 0.82$), conditional material rewards subscale ($\alpha = 0.78$), unconditional material rewards subscale ($\alpha = 0.88$), and material punishments subscale ($\alpha = 0.83$).

Adolescents' materialism We measured students' materialism with the Material Values Scale for Children (MVS-c) developed by Oprea et al. (2011). The scale included three dimensions: material centrality, material happiness, and material success, with a total of 18 items. The sample items included the following: "Do you think it's important to own expensive things?" (material centrality); "Would you be happier if you could buy more brands that are expensive?" (material happiness); and "Do you prefer your peers who have expensive items?" (material success). Participants responded on a 4-point Likert scale (1 = no, not at all, 4 = yes, very much). The item scores were averaged to create the total scale scores (Cronbach's $\alpha = 0.93$), with a higher score representing a higher level of materialism.

Parents' materialism Because previous research has shown that materialistic parents tend to have materialistic children (Ahuvia & Wong, 2002; Goldberg et al., 2003), this survey

included measures of parents' materialism as a potential control variable. Parents' materialism was measured with the material values scale (MVS) developed by Richins and Dawson (1992). The scale included 18 items to which participants responded on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The item scores were averaged to create the total scale scores (Cronbach's $\alpha = 0.79$), and a higher score represented a higher level of materialism.

Demographic information The survey also included demographic items, such as age, gender, grade, whether the participant was an only child, family residence (*measured by two categories: cities and towns and villages*), parents' education (*measured by six categories: elementary school and below, junior high school, high school or technical secondary school, junior college, bachelor's degree, and master's degree and above*), and annual family income (*categorized into eight levels: 10,000 and below, 10,001–20,000, 20,001–40,000, 40,001–80,000, 80,001–160,000, 160,001–320,000, 320,001–640,000, and above 640,000*).

Results

Common Method Bias Test

Considering that all the data in this study were obtained via participants' self-reports, common method bias might have been present, so the Harman single-factor test was conducted (Podsakoff et al., 2003). The results showed that there were 12 factors with eigenvalues greater than 1 in the student version of the questionnaire, and the first factor explained 22.62% of the total variation; there were 12 factors with eigenvalues greater than 1 in the parent version of the questionnaire, and the first factor explained 18.09% of the total variation. Therefore, both factors were far below the critical value of 40%, indicating that there were no obvious common method biases in the measurements.

Tests for Biased Recall

There are usually two types of recall biases: one is the random error caused by forgetting and tends to be randomly distributed across respondents, and the other is the systematic error caused by memory error, which is not randomly distributed. The system error can be divided into two categories: the first affects measurements from all members of the sample, and the other only affects measurements from the biased subset of the sample (Richins & Chaplin, 2015). In terms of the former, for example, most adolescents recall more material parenting than actually occurred, which causes errors in the means but does not affect the strength of the relationships; for the latter, for example, the group of highly materialistic adolescents recall more material parenting than actually occurred, which may

affect the relationship between variables, so it is necessary to test it.

Following Richins and Chaplin (2015), the second type of systematic error was examined by assessing whether the parent-child agreement level correlated with the child's materialism level. Significant correlations between recollection agreement and materialism would be evidence of systematic error. Recollection agreement was measured as the average score of material parenting recalled by children minus the average score of material parenting recalled by parents. A positive value on the agreement measure indicates that the child provided a higher rating on material parenting than the parent did. Conversely, a negative value indicates that the child's rating on the variable was lower than the parent's rating.

Through a correlation analysis, it was found that there was no significant correlation between the child's materialism and recollection agreement on conditional material rewards ($r = 0.09$, $p = 0.20$), unconditional material rewards ($r = 0.05$, $p = 0.50$), or material punishments ($r = -0.03$, $p = 0.67$). These results suggested that a biased subgroup systematic error was not present in the data.

Parent-Child Rating Agreement

In addition to recall bias, this study also focused on the rating agreement between the child and the parent on the same items. According to Richins and Chaplin (2015), for categorical variables such as annual family income and parents' education, a weighted kappa analysis (Cohen, 1968) was conducted. However, for continuous variables such as material parenting, the rating agreement was examined by the average discrepancy between the child and parent responses. If the average difference was more than 1 point, it indicated that the rating agreement between the child and parent was relatively low; otherwise, the average difference of less than 1 point represented a high rating agreement.

As shown in Table 1, the average differences in scores on three components of material parenting, whether in childhood or early adolescence, were all far below 1 point, indicating that there was a high rating agreement between the child and parent on material parenting. The weighted kappa coefficient of family residence was 1, which indicated very high agreement. The coefficient of parents' education was more than 0.6, also suggesting relatively high agreement. By comparison, there was only moderate agreement for annual family income, with a weighted kappa coefficient between 0.4 and 0.6. This could be explained by the fact that junior high school students are still young and are not well informed of their family income, as parents generally do not tell their children about it, resulting in a certain difference between their ratings on this item.

Table 1 Rating agreement tests

Continuous variables	Average difference	
	Childhood	Early adolescence
Conditional material rewards	0.17	0.02
Unconditional material rewards	0.20	−0.07
Material punishments	−0.29	−0.19
Categorical variables	Weighted kappa coefficient	
Family residence	1.00	
Parents' education	0.73	
Annual family income	0.52	

Note: For the weighted kappa coefficient, less than 0.20, indicated low agreement; 0.21–0.40, a general degree of agreement; 0.41–0.60, moderate agreement; 0.61–0.80, relatively high agreement; and 0.81–1.00, high agreement

The Relationship between Early Material Parenting and Adolescents' Materialism

To exclude the possible influence of parental materialism on adolescents' materialism, we first conducted a correlation analysis on the two variables and found no significant association between them ($r = 0.09$, $p = 0.19$). In all dimensions of materialism, the correlations between parents and their children were also not significant. These results indicated that parents' materialism did not exert an obvious influence on their children's materialism, so in the follow-up analysis, parents' materialism was not treated as a covariate.

Then, based on the analysis of material parenting data reported by the students, we found that there was a significant positive correlation between conditional material rewards in childhood and those in early adolescence ($r = 0.69$, $p < 0.001$), unconditional material rewards in childhood and those in early adolescence ($r = 0.82$, $p < 0.001$), and material punishments in childhood and those in early adolescence ($r = 0.77$, $p < 0.001$). This result indicated that material parenting was consistent over time. If parents adopted more material parenting in childhood, it would continue in adolescence. To simplify subsequent analyses, for each of the three components of material parenting, we created a variable that was the average of that component's childhood material parenting and early adolescent material parenting. The results showed that early conditional material rewards were positively correlated with adolescents' materialism ($r = 0.16$, $p < 0.05$). However, no significant association was found between materialism and early unconditional material rewards ($r = 0.09$, $p = 0.18$) or early material punishments ($r = 0.03$, $p = 0.68$).

Discussion

The aim of the pilot study was to examine whether recall bias was a significant concern for the variables measured in our study. Through a small sample of child-parent pairing questionnaires, we found that biased subgroup systematic error that may affect the relationship between variables was not present in this study, which suggested that there was no significant recall bias in the early material parenting reported by adolescents. Furthermore, the results showed a relatively high rating agreement between children and parents on material parenting and other demographic items. Moreover, the Chinese version of the material parenting questionnaire demonstrated good reliability. Therefore, it was deemed feasible to carry out a large sample retrospective study on early material parenting among adolescents. In addition, we preliminarily explored the relationship between early material parenting and adolescents' materialism and found that only one component of material parenting (conditional material rewards) was positively related to materialism in adolescents, which only partially verified our hypothesis. Thus, in the formal study, we further investigate these relationships among a larger sample of adolescents and examine the mediating role of overt narcissism.

The Formal Study

The aim of the formal study was to, among a larger sample of adolescents, examine the relationship between material parenting and materialism and whether overt narcissism mediated the relationship.

Method

Participants and Procedures

A total of 1300 students participated in this study. They were recruited from 2 rural junior and senior high schools in Southwest China and 2 urban junior and senior high schools in Central China. After eliminating participants who submitted invalid questionnaires, the final sample consisted of 1173 students, with a mean age of 14.76 years ($SD = 1.75$), among whom 46.3% were boys, 58.8% were only children, 54.4% were from cities, and 45.6% were from towns and villages. First-grade senior high school students accounted for 18.4% of the sample, second- and third-grade senior high school students accounted for 16.8% and 16.3%, respectively, and junior high school students accounted for approximately 15% per grade.

After obtaining our institutional ethical approval, we obtained permission from school administrators and class teachers to conduct the survey. All students completed the

questionnaires during regular school hours in their classrooms. After the survey, each participant was given a piece of candy as a token of appreciation.

Measures

Material parenting Material parenting was measured with the adapted Chinese student version of the material parenting questionnaire described in the pilot study. The following were the Cronbach's α values for the total scale and the three subscales for childhood and early adolescence: for childhood, the total scale ($\alpha = 0.80$), conditional material rewards subscale ($\alpha = 0.80$), unconditional material rewards subscale ($\alpha = 0.83$), and material punishments subscale ($\alpha = 0.76$); for early adolescence, the total scale ($\alpha = 0.80$), conditional material rewards subscale ($\alpha = 0.83$), unconditional material rewards subscale ($\alpha = 0.84$), and material punishments subscale ($\alpha = 0.79$).

Adolescents' materialism The measure of adolescents' materialism was the same as that in the pilot study and displayed good reliability (Cronbach's $\alpha = 0.92$).

Overt narcissism We measured overt narcissism with the narcissistic personality questionnaire developed by Zhou et al. (2009). It included three dimensions, namely, desire for power, sense of superiority, and self-appreciation, with a total of 34 items. The sample items included the following: "I like to have the power to dominate others" (desire for power); "I am an extraordinary person" (sense of superiority); and "I like looking in the mirror" (self-appreciation). Participants responded on a 6-point Likert scale (1 = very inconsistent, 6 = very consistent). The item scores were averaged to create the total scale scores (Cronbach's $\alpha = 0.96$), with a higher score representing a higher level of overt narcissism.

Demographic information As in the pilot study, this survey included a measure of demographic items, such as age, gender, grade, being an only child, and family residence. According to the tests for parent-child rating agreement in the pilot study, because the children did not know their parents' education level and family income very well, there were some deviations in the evaluation of these items. Thus, we no longer measured these two variables in the formal study.

Results

Common Method Bias Test

The test for common method bias (Podsakoff et al., 2003) was conducted as in the pilot study. The results showed that there were 18 factors with eigenvalues greater than 1, and the first

factor explained 19.79% of the total variation, which was far below the critical value of 40%, indicating that there was no obvious common method bias in this survey.

Descriptive Statistics and Correlations between the Key Variables

As seen from Table 2, it is quite common for Chinese teenagers to be subject to material parenting from childhood, with more conditional material rewards ($M = 3.08$ on a 4-point Likert scale) than material punishments ($M = 2.11$ on a 4-point Likert scale) and an upper-middle level of unconditional material rewards ($M = 3.33$ on a 5-point Likert scale). Girls received more conditional material rewards ($r = 0.11$, $p < 0.001$) and unconditional material rewards ($r = 0.16$, $p < 0.001$) than boys, but there was no gender difference in material punishments. In addition, there were no significant differences in the three components of material parenting in terms of family residence and being an only child.

Materialism was positively correlated with conditional material rewards ($r = 0.16$, $p < 0.001$) and unconditional material rewards ($r = 0.13$, $p < 0.001$) but had no significant association with material punishments ($r = 0.03$, $p = 0.26$). Similarly, overt narcissism was positively correlated with conditional material rewards ($r = 0.17$, $p < 0.001$) and unconditional material rewards ($r = 0.19$, $p < 0.001$) but had no significant association with material punishments ($r = 0.05$, $p = 0.11$). Additionally, there was a positive correlation between overt narcissism and materialism ($r = 0.45$, $p < 0.001$). These results provided the basis for mediation analysis among the two components of early material parenting (conditional material rewards and unconditional material rewards), overt narcissism and materialism.

Because there was a weak positive correlation between materialism and age ($r = 0.07$, $p < 0.05$), and the level of materialism of urban children was higher than that of children from towns and villages ($r = -0.11$, $p < 0.001$), age and family residence were used as control variables in the subsequent mediation tests.

Mediation Effect of Overt Narcissism

We used the PROCESS macro for SPSS (Model 4) developed by Hayes (2013) to evaluate the mediation effect of overt narcissism between early material parenting and adolescents' materialism.

First, we examined the mediating role of overt narcissism in the relationship between conditional material rewards and materialism. The results showed that the total effect of conditional material rewards on materialism was significant ($\beta = 0.16$, $t = 5.59$, $p < 0.001$, 95% CI = 0.10 to 0.22). As shown in Fig. 1, conditional material rewards

Table 2 Descriptive analysis and correlations

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Gender ^a	0.54	0.50								
2. Age	14.76	1.75	−0.04							
3. Only child ^b	0.59	0.49	−0.05	0.04						
4. Family residence ^c	0.46	0.50	0.01	0.28***	−0.03					
5. Conditional material rewards	3.08	0.62	0.11***	−0.03	0.03	−0.03				
6. Unconditional material rewards	3.33	0.88	0.16***	0.05	0.01	0.00	0.50			
7. Material punishments	2.11	0.80	−0.01	−0.07*	−0.04	0.05	0.04	−0.09**		
8. Overt narcissism	2.99	0.98	−0.12***	−0.02	0.04	−0.19***	0.17***	0.19***	0.05	
9. Materialism	2.14	0.59	0.01	0.07*	−0.02	−0.11***	0.16***	0.13***	0.03	0.45***

Note: ^a Female = 1, male = 0; ^b only child = 1, not the only child = 0; ^c towns and villages = 1, cities = 0. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

positively predicted overt narcissism ($\beta = 0.16$, $t = 5.79$, $p < 0.001$, 95% CI = 0.11 to 0.22), which in turn positively predicted materialism ($\beta = 0.43$, $t = 16.14$, $p < 0.001$, 95% CI = 0.38 to 0.48). The residual direct effect of conditional material rewards on materialism was also significant ($\beta = 0.09$, $t = 3.39$, $p < 0.001$, 95% CI = 0.04 to 0.14). Overt narcissism, therefore, played a partial mediating role in the link between conditional material rewards and materialism (indirect effect = 0.07, 95% CI = 0.04 to 0.10), and the proportion of that mediating effect was 43%.

Then, the mediation effect of overt narcissism between unconditional material rewards and materialism was tested. Similarly, we found that the total effect of unconditional material rewards on materialism was significant ($\beta = 0.13$, $t = 4.45$, $p < 0.001$, 95% CI = 0.07 to 0.18). As shown in Fig. 2, unconditional material rewards positively predicted overt narcissism ($\beta = 0.19$, $t = 6.67$, $p < 0.001$, 95% CI = 0.13 to 0.24), which in turn positively predicted materialism ($\beta = 0.44$, $t = 16.24$, $p < 0.001$, 95% CI = 0.38 to 0.49). The residual direct effect of unconditional material rewards on materialism was not significant ($\beta = 0.05$, $t = 1.72$, $p > 0.05$, 95% CI = −0.01 to 0.10). Thus, overt narcissism also played a mediating role in the relationship between unconditional material rewards and materialism (indirect effect = 0.08, 95% CI = 0.06 to 0.11), and the proportion of that mediating effect was 64%.

Discussion

Through a large sample of adolescents, this study replicated the findings of the pilot study, which suggested that conditional material rewards were positively associated with materialism, but that the hypothesized relationship did not hold for material punishments. In addition, our formal study showed that the potential effects of early material parenting on materialism were not restricted to conditional material rewards but also occurred for unconditional material rewards.

The formal study also examined the underlying mechanisms that may explain the relationship between material parenting and adolescents' materialism. The data supported the mediation effect model of overt narcissism. Conditional/unconditional material rewards may lead to a child's overt narcissism; to maintain this narcissistic state, the child needs to constantly use material to attract others' attention and gain their respect, forming a tendency of materialism in the long term.

General Discussion

This research makes several contributions. This is the first study to introduce the concept of material parenting put forward by Richins and Chaplin (2015) to the Chinese cultural context and to carry out empirical research on Chinese youth

Fig. 1 Mediation effect model of overt narcissism in the relationship between conditional material rewards and materialism. Path values are the path coefficients with standard errors. *** $p < 0.001$. All variables were standardized

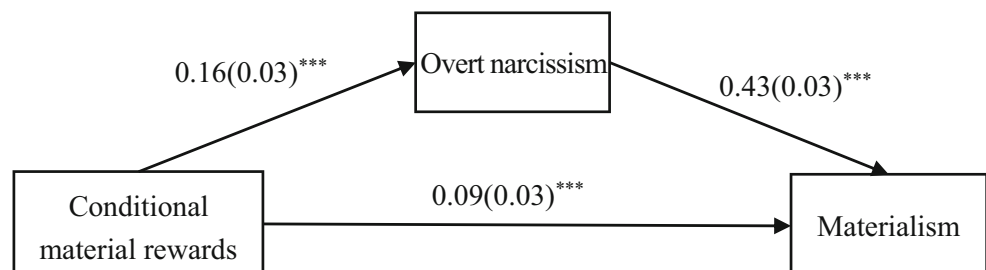
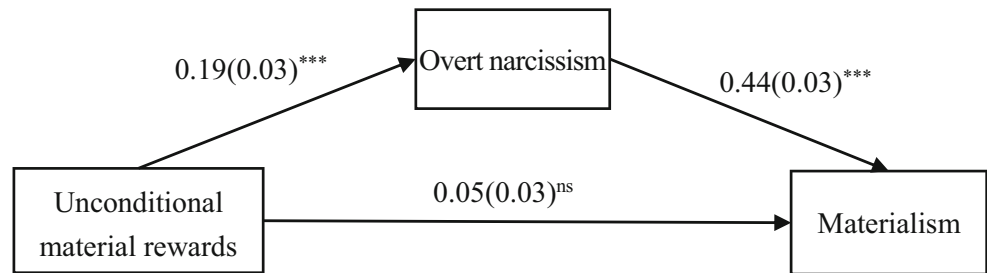


Fig. 2 Mediation effect model of narcissism in the relationship between unconditional material rewards and materialism. Path values are the path coefficients with standard errors.

*** $p < 0.001$, ^{ns} $p > 0.05$. All variables were standardized



samples. In recent years, with the rapid development of China's economy, material parenting has become a common parenting style. The findings of our investigation confirmed this. The material parenting Chinese teenagers received in childhood and early adolescence was generally at a relatively high level, and there were no significant differences in the material parenting level depending on whether the teenagers were only children or lived in towns and villages or cities. However, interestingly, girls received more conditional/unconditional material rewards than boys. To a certain extent, this suggests that the traditional Chinese parenting style of "raising sons in poverty and raising daughters in wealth" is still popular today. Parents tend to treat girls more favorably, giving them more money and material rewards, and treat boys more strictly, giving them less money and material rewards. In terms of the relationship between early material parenting and adolescents' materialism, we found that conditional/unconditional material rewards positively predicted materialism. However, this association did not hold for material punishments. This result was slightly different from that found in the Western adult sample by Richins and Chaplin (2015), which showed that all three components of material parenting positively predicted materialism. We speculate that this may be due to the differences between samples or their cultural backgrounds, so the relationship needs to be further tested on a broader range of participants from diverse backgrounds.

Second, this research provides direct empirical evidence for the plausible mediating role of overt narcissism, as proposed by Richins and Chaplin (2015), and supports the dynamic self-regulation model of narcissism (Morf & Rhodewalt, 2001). Conditional/unconditional material rewards enable children to develop self-identity and friendships and to show off to their peers with the help of material goods or money (Richins, 2011) to increase their chances of getting attention and admiration from others, subsequently gain a sense of superiority, and form a narcissistic tendency. The need for admiration and esteem from others and the behaviors associated with fulfilling such needs may lead to an addiction-like pattern where individuals constantly seek opportunities (e.g., new material possessions) to accrue social rewards (Richins & Chaplin, 2015), which in the long turn promotes materialistic values. It is worth mentioning that our data showed that the mediating effect of overt narcissism in the relationship between conditional/unconditional

material rewards and materialism accounted for 43% and 64% of the total effect, respectively, indicating that overt narcissism is a very important mediating variable, which expands the research on the underlying psychological mechanisms that explain how material parenting influences materialism.

This research also contributes to understanding the causes of adolescents' materialism from the perspective of family. Previous studies have found that many family factors lead to adolescents' materialism, such as low family socioeconomic status (e.g., Chaplin et al., 2014; Li et al., 2018), family disruptions (e.g., Baker et al., 2013), and parental apathy or rejection (e.g., Fu et al., 2015). This study focused on a relatively unexplored factor of material parenting and showed that conditional/unconditional material rewards are also antecedents of adolescents' materialism, which is undoubtedly a contribution to this field.

Finally, this research has significant practical implications for the cultivation of adolescents' values. Material parenting can be seen from two viewpoints. On the one hand, it expresses care for their children and regulates their behavior. On the other hand, it promotes the formation of materialistic values through narcissism. In particular, Chinese parents often spend much time working and neglect spending time with their children. To compensate for this, they frequently use conditional or unconditional material rewards, leading to a high level of materialism in children. As we have mentioned in the literature review, materialism has harmful effects on teenagers' mental health and academic performance. Our findings suggest that parents should appropriately reduce material parenting behavior and give their children more spiritual rewards, such as rewarding their children with a hiking trip in the park or forest after reaching learning goals. Natural contact is associated with various health- and sustainability-related outcomes (Martin et al., 2020). It has been demonstrated that people's exposure to nature is associated with decreased materialism (Joye et al., 2020). Moreover, visiting magnificent views of nature can increase children's sense of awe (Tian & Lu, 2015), which may facilitate a shift from the pursuit of extrinsic goals (material possession) to the pursuit of intrinsic goals (Weinstein et al., 2009). In addition, they should also pay attention to the cultivation of children's personality. According to a recent study, an intervention designed to increase gratitude (e.g., writing a gratitude diary) significantly

reduced materialism among adolescents (Chaplin et al., 2019). Therefore, it may be useful for schools and parents to jointly carry out gratitude education to foster children's disposition of gratitude, thus reducing their materialistic tendencies.

There are some limitations to this study, which can be addressed by future research. First, we used a retrospective survey to measure material parenting. Although our data in the pilot study supported the feasibility of the retrospective method, recall error or bias could not be completely avoided, and there is insufficient evidence of causal inference. Therefore, longitudinal (prospective) studies are needed to provide further empirical support for the findings of this study. Second, when we examined the influence of material parenting on materialism, we did not control for the potential effect of traditional parenting styles (such as warm parenting and severe parenting) on materialism, so future research should consider other parenting styles as control variables to make the results more robust. Third, although our sample size was relatively sufficient, we selected students from only two regions in China; thus, the representativeness of the sample is still insufficient. Future studies should sample from multiple regions and improve the generalization of the research conclusions. Finally, we only examined the mediating role of overt narcissism. Future research could further explore the relationships among different types of narcissism, material parenting and materialism.

Conclusions

This research explored the relationship between early material parenting and adolescents' materialism and the underlying

psychological mechanisms by conducting two retrospective surveys. The results showed that conditional/unconditional material rewards positively predicted materialism, and overt narcissism played a mediating role in this relationship. Our findings indicate that early material parenting may lead to overt narcissistic personality in children and subsequently foster their materialistic values.

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Data Availability The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to them containing information that could compromise research participant privacy/consent.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Appendix: Material parenting scale

Conditional Material Rewards

Original version:

1. When you were in [third/seventh/tenth] grade, if you had a positive accomplishment or did something difficult that your parents really wanted you to do, what would happen?
 - My parents would praise me.
 - My parents would take me out for a food treat, like an ice cream or restaurant meal.
 - My parents would buy something nice for me.
 - My parents would give me money as a reward.
 - I would get some special privileges.
 - Nothing much would happen.
2. If you got good grades in [third/seventh/tenth] grade, what would happen at home?
 - My parents would praise me.
 - My parents would take me out for a food treat, like an ice cream or restaurant meal.
 - I got paid money for getting good grades.
 - My parents would buy me something I'd been wanting.
 - I would get extra privileges.
 - Nothing much would happen.

Translated version:

1. When you were in [primary/secondary] school, if you had a positive accomplishment or did something difficult that your parents really wanted you to do, what would happen?
 - My parents would take me out for a food treat.
 - My parents would buy something nice for me.
 - My parents would give me money as a reward.
 2. When you were in [primary/secondary] school, if you got good grades, what would happen?
 - My parents would take me out for a food treat.
 - I got paid money for getting good grades.
 - my parents would buy me something I'd been wanting.
-

Unconditional Material Rewards

Original version:

1. These questions concern your relationship with your [mother/father] when you were in [third/seventh/tenth] grade.
 - My [mother/father] often bought things for me just because I wanted them.

Translated version:

1. These questions concern your relationship with your [mother/father] when you were in [primary/secondary] school.
 - My [mother/father] often bought me a lot of delicious food without any conditions.
 - My [mother/father] often bought things for me just because I wanted them.
 - When I am short of money, I just ask my [mother/father] for it and [she/he] always gives it to me.
-

Material Punishments

Original version:

1. At this age [third/seventh/tenth grade], when you misbehaved or got into trouble at home in a pretty serious way, what was likely to happen?
 - I would get sent to my room. [third and seventh grades only]
 - I would be grounded or restricted from activities I enjoyed.
 - Some of my [toys/stuff/things] would be taken away temporarily or permanently.
 - One or both of my parents would raise their voice or speak angrily to me.
 - I would lose money from my allowance.
 - I would be spanked. [third and seventh grades only].
 - I would lose driving privileges. [tenth grade only].
 - One or both of my parents would have a serious discussion with me about what I did wrong.
 - One or both of my parents would make suggestions about how I could improve.
 - I would get a lot of criticism.
 - My parents would say they were disappointed in me.
 - Nothing much would happen.
2. If you got bad grades in [third/seventh/tenth] grade, what would happen at home?
 - I would be grounded or restricted from activities I enjoyed..
 - Some of my [toys/stuff/things] would be taken away temporarily or permanently.
 - One or both of my parents would raise their voice or speak angrily to me.
 - My parents would reduce my allowance.
 - I would be spanked. [third and seventh grades only].
 - I would lose driving privileges. [tenth grade only].
 - My parents would help me work out a plan to improve my grades.
 - My parents would criticize me.
 - Nothing much would happen.

Translated version:

1. At the [primary/secondary] school, when you misbehaved or got into trouble at home in a pretty serious way, what was likely to happen?
 - Some of my [toys/stuff/things] would be taken away temporarily or permanently.
 - I would lose money from my allowance.
 2. If you got bad grades in [primary/secondary] school, what would happen at home?
 - Some of my [toys/stuff/things] would be taken away temporarily or permanently.
 - My parents would reduce my allowance.
-

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