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ORIGINAL PAPER

Nonattachment Alleviates the Longitudinal Impact of Experienced and Anticipated Discrimination on Parents of Children with Autism Spectrum Disorder

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Abstract

Objectives Research shows that stigma has an adverse psychological impact on parents of children with autism spectrum disorder (ASD). However, there are very few studies examining the potential protective factors that may buffer the adverse impact. The present study investigated the longitudinal associations of experienced discrimination and anticipated discrimination with detrimental cognitive consequences (i.e., self-stigma content and self-stigma process) and affective consequences (i.e., parenting stress and depressive symptoms) for parents of children with ASD and tested whether these associations would be moderated by nonattachment.

Methods At two time points separated by 24 months, 381 Hong Kong parents of children with ASD completed standardized questionnaires to provide data on experienced discrimination, anticipated discrimination, nonattachment, self-stigma content, self-stigma process, parenting stress, and depressive symptoms.

Results Hierarchical regressions showed that experienced discrimination and anticipated discrimination had significant interactions with nonattachment at baseline in predicting adverse psychological consequences (i.e., self-stigma content, self-stigma process, parenting stress, and depressive symptoms) at follow-up. In addition, simple slope analyses showed that the associations of experienced discrimination and anticipated discrimination with the adverse psychological consequences were weaker in parents with high nonattachment than in parents with low nonattachment.

Conclusions Our findings indicate the longitudinal associations of experienced discrimination and anticipated discrimination with detrimental cognitive consequences and affective consequences for parents of children with ASD, and highlight the protective effects of nonattachment against such associations. These findings suggest the importance of supporting parents of children with ASD to increase nonattachment in order to cope with discrimination and improve psychological well-being.

Keywords Discrimination · Nonattachment · Self-stigma content · Self-stigma process · Parenting stress · Depressive symptoms · Autism spectrum disorder

Public stigma refers to negative beliefs, attitudes, and behaviors of the general population toward individuals with discredited attributes (Chan & Leung, 2021). According to the World Health Organization (2021), public stigma has negative effects on children with autism spectrum disorder (ASD) around the world. Since there are no conspicuous physical markers of ASD, when children with ASD exhibit social and behavioral abnormalities in public, they may be viewed as willfully defiant and disruptive and thus stigmatized and discriminated against (Chan & Lam, 2018). Specifically, they may suffer ostracism, exclusion, and rejection by their peers (Mazumder & Thompson-Hodgetts, 2019). They may also receive discourteous and disrespectful treatments from their teachers and therapists in education and rehabilitation settings (Helps et al., 1999; Ling et al., 2010).

While children with ASD are affected by public stigma, their parents are affected by courtesy stigma (Chan & Lam, 2017). Courtesy stigma refers to negative beliefs, attitudes, and behaviors of the general population toward associates (e.g., families) of individuals with discredited attributes

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(Chan & Leung, 2021). Parents of children with ASD may be accused unreasonably of causing their children's social and behavioral abnormalities (Neely-Barnes et al., 2011; Nissenbaum et al., 2002). Specifically, they may be criticized unjustly for passing on bad genes and producing bad breeds of offspring (Farrugia, 2009). They may also be condemned unfairly for being ineffective and incompetent in their parenting and failing to monitor and discipline their children (Broady et al., 2017).

Parents of children with ASD may sadly *experience* and anxiously *anticipate* discrimination in everyday life (Chan & Lam, 2018). In particular, these parents may ruminate over previous instances of external criticism and social disapproval (Serchuk et al., 2021). They may also worry about receiving biased or unfair treatment at some time in the future (Chan et al., 2018a). Due to their concerns and their fear of interpersonal rejection, they may experience social anxiety and engage in social withdrawal to avoid interactions with others (Mak & Cheung, 2008). As chronic self-concealment may reduce the sense of personal autonomy and environmental mastery, they may increasingly develop unpleasant feelings of disempowerment and demoralization (Chan & Leung, 2021).

Both experienced and anticipated discrimination may make parents of children with ASD suffer a sense of inferiority and insecurity, resulting in the development and maintenance of self-stigma (Mak & Kwok, 2010). Specifically, their actual and probable exposure to external criticism may increase the degree to which they feel inferior and endorse their self-stigmatizing thoughts, termed as self-stigma "content" (Chan & Lam, 2018). Their ruminations and worries about social disapproval may also increase the degree to which they feel insecure and think about their self-stigmatizing thoughts repeatedly, termed as self-stigma "process" (Chan & Lam, 2018). Notably, both the "content" and "process" of self-stigma may take a toll on self-esteem for parents of children with ASD (Chan & Lam, 2018). In particular, parents experiencing self-stigma content and process may show higher levels of self-blame and self-shame as well as lower levels of self-acceptance and self-affirmation (Chan & Lam, 2018).

When parents of children with ASD feel overwhelmed by, or unable to cope with, discrimination, they may experience considerable stress and distress in their parenting process (Chan & Leung, 2020; Wong et al., 2016). The stressed parents may suffer greater levels of frustration and exhaustion in parenting (Green, 2007). They may also lose the joy and pleasure of parenthood (Mak & Cheung, 2008). The potential cumulative effects include increased negative affect, heightened languishing mood, and aggravated depressive symptoms (Chan & Leung, 2020; Wong et al., 2016). The depressed parents may suffer elevated levels of sadness, powerlessness, and desperation (Chan & Leung, 2021). They may also show reduced levels of responsiveness, warmth, and affection toward their children in the parenting process (Chan & Lam, 2016).

Given the psychological harm of discrimination, it is of paramount importance to help parents of children with ASD develop the capacity to cope with it. According to a theoretical model of mindful coping with stigma (Chan et al., 2018b), one potential way to help these parents build resistance and resilience against discrimination is through the cultivation of mindfulness. Mindfulness is defined as awareness arising through "paying attention in a particular way: on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1994, p. 4). Research shows that the mindful awareness of the present moment can enable parents to gain insight into the ever-changing nature of reality and release them from mental fixations on experiences or conditions (Chan & Lam, 2017). In turn, such a non-clinging mode of being with the world can enable parents to let go of their stigmatizing events or circumstances, resulting in reduced suffering or distress (Chan & Lam, 2017).

There is growing evidence suggesting that mindfulness may facilitate adaptive coping with discrimination through the psychological process of nonattachment (Joss et al., 2020). Research shows that the trait and practice of mindfulness may contribute to the development of nonattachment (Joss et al., 2020; Sahdra et al., 2016). Nonattachment refers to letting go of, or not clinging to, one's experiences (Sahdra et al., 2010). It involves an absence of fixation on one's ideas or feelings (Desbordes et al., 2015). It also involves a lack of internal force to attain, hold, change, or avoid certain conditions (Desbordes et al., 2015). Individuals who are nonattached can accept the flow of events in life without pushing them away (Chio et al., 2018). They can show openness to what they encounter in life, irrespective of whether it looks positive or negative at a particular time (Chio et al., 2018). Their minds are flexible, receptive, and calm, rather than rigid, grasping, and restless (Lamis & Dvorak, 2014).

Nonattachment can enhance a kind of happiness that is non-contingent in situations and allow one to retain equanimity when facing adversity (Desbordes et al., 2015; Feng et al., 2016). Specifically, nonattached individuals can adopt attitudes of openness to and acceptance of their life experiences and maintain calm and even-minded mental states that are undisturbed by negative events or situations (Sahdra et al., 2010; Whitehead et al., 2018b). Nonattached individuals can also release their minds from fixating on their suffering, develop more objective perceptions of their hardships, and take a broad and balanced perspective to interpret their setbacks (Sahdra et al., 2010, 2016). In this way, they can be less reactive and less caught up in negative thoughts and feelings when faced with adverse experiences (Klein & Robinson, 2019; Lamis & Dvorak, 2014).

Nonattachment may enable parents of children with ASD to alleviate the negative psychological impact of discrimination (Joss et al., 2020). In particular, the non-clinging and non-reactive attitudes associated with nonattachment may allow parents to acknowledge the presence of social disapproval without internalizing a negative self-image and suffering shame or unease (Whitehead et al., 2018a). Rather than ruminating and worrying about their negative social experiences, nonattached parents are more likely to take flexible and open standpoints toward their suffering and maintain a safe emotional distance from it (Lamis & Dvorak, 2014). As they are able to cope better with discrimination and associated challenges, they are less likely to become devastated and demoralized and are less susceptible to negative self-thoughts and emotional distress (Ciarrochi et al., 2020).

To date, very few studies have investigated the potential shielding effects of nonattachment against discrimination among stigmatized individuals. However, recent studies have examined the psychological benefits of nonattachment in the general population, with findings suggesting that it is associated positively with resilience, self-acceptance, and life satisfaction and negatively with depression, anxiety, and stress (Feliu-Soler et al., 2016; Whitehead et al., 2019). Importantly, initial evidence shows that nonattachment may foster cognitive reappraisal and facilitate emotion regulation in the face of adversity (Sahdra et al., 2010). Given the protective quality of nonattachment against suffering and mental affliction, it may buffer the negative impact of experienced and anticipated discrimination on self-stigma and emotional distress experienced by parents of children with ASD.

A growing body of research reveals the adverse psychological impact of stigma on parents of children with ASD (Deguchi et al., 2021; Liao et al., 2019; Papadopoulos et al., 2019). While previous studies have conducted mediation analyses to examine "why" stigma has an adverse impact (Chan & Leung, 2021), few studies have performed moderation analyses to examine "when" the adverse impact can be mitigated (Chan & Lam, 2017). In order to advance the field and contribute to the literature, our research team has recently launched a multi-year research project to further investigate the impact of stigma on families of children with ASD (Chan & Leung, 2020, 2021). As part of this project, the present study utilized a two-year, two-wave longitudinal design to examine the potential moderating role of nonattachment in the long-term associations between discrimination and detrimental psychological consequences. In this study, we tested whether experienced discrimination and anticipated discrimination at time 1 (T1) would be associated with detrimental cognitive consequences (i.e., self-stigma content and self-stigma process) and affective consequences (i.e., parenting stress and depressive symptoms) at time 2 (T2), after controlling for autoregressive effects (i.e., the baseline levels of the outcomes at T1) and demographic factors (i.e., parental and child gender, age, and intellectual disability at T1). We also assessed whether the associations would be moderated by nonattachment at T1. We hypothesized that experienced discrimination and anticipated discrimination at T1 would be linked longitudinally to increased levels of self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T2. We also hypothesized that the longitudinal linkages would be weaker in those with high nonattachment, than in those with low nonattachment, at T1.

Methods

Participants

This study is part of a larger research project investigating the impact of stigma on families of children with ASD (Chan & Leung, 2020, 2021). In this study, the participants were parents of children with ASD living in Hong Kong SAR, China. According to G*Power, at $\alpha = 0.05$ and power = 0.80, at least 213 participants are required to detect small-to-medium effect sizes ($f^2 = 0.08$) of up to 10 predictors in our analytic models. Therefore, the required sample size was initially set as 220. Yet, in order to conservatively guard against other potential data collection issues, such as participant attrition, the target sample size was set to be 440.

Of 441 parents of children with ASD who participated at T1, 381 participated at T2, resulting in a retention rate of 86.4%. There were no differences between the participants who were retained and those who dropped out for any substantive or background variables ($ps > 0.05$). Only the retained participants were included in the analyses. At T1, the participating parents (81.9% mothers and 18.1% fathers) had a mean age of 45.78 years ($SD = 6.90$ years). Most of them were married (87.1%) and not in employment (56.7%). The majority of them had attended high school or college (96.3%). Their median monthly family income was HK$20,001–HK$25,000 (≈ US$2,568–US$3,210). On average, they spent 99.78 h ($SD = 57.16$ h) per week taking care of their children with ASD. The children (15.5% girls and 84.5% boys) had a mean age of 11.61 years ($SD = 3.89$ years; range = 4–19 years). Most of the children had comorbid intellectual disabilities (79.3%).

Procedures

The participants were recruited through referral from four autism service centers and 14 special schools in Hong Kong SAR, China. The inclusion criteria were parenting a child with a clinician-confirmed DSM-5 diagnosis of ASD and being able to read and write in Chinese. Eligible parents

signed written consent forms and filled in standardized questionnaires at baseline (T1) and 24 months later (T2). After completing questionnaires at each time point, each participant received a monetary incentive of HK$200 (≈ US$26). This study was approved by the research ethics committee of the authors' institution and was conducted from December 2018 to May 2021.

Measures

Experienced Discrimination

At T1, experienced discrimination was assessed using the 4-item Parental Stigma Scale (Chan & Leung, 2021). On a 5-point Likert scale where 1 = *never* and 5 = *always*, the participants reported their perceptions of actual exposure to community stigma targeted against themselves as parents of children with ASD (e.g., "People look down on me because I have a child with ASD."). The item ratings were averaged, such that higher scores indicated higher levels of experienced discrimination. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Chan & Leung, 2021). In the present study, its Cronbach's alpha value was 0.94 at T1, and its McDonald's omega value was 0.94 at T1.

Anticipated Discrimination

At T1, anticipated discrimination was assessed using an adapted version of the 4-item Anticipated Discrimination Scale (Mickelson et al., 1999). On a 6-point Likert scale where 1 = *very much impossible* and 6 = *very much possible*, the participants reported their expectations of probable exposure to community stigma shown toward themselves as parents of children with ASD (e.g., "People will treat me differently once they find out that I have a child with ASD."). The item ratings were averaged, such that higher scores indicated higher levels of anticipated discrimination. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Mickelson et al., 1999). In the present study, its Cronbach's alpha value was 0.95 at T1, and its McDonald's omega value was 0.95 at T1.

Nonattachment

At T1, nonattachment was assessed using the 8-item Nonattachment Scale (Chio et al., 2018; Sahdra et al., 2010). On a 6-point Likert scale where 1 = *disagree strongly* and 6 = *agree strongly*, the participants rated the degree to which they showed nonattachment in everyday life (e.g., "I can let go of regrets and feelings of dissatisfaction about the past."). The item ratings were averaged, such that higher scores indicated higher levels of nonattachment. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Yang et al., 2020). In the present study, its Cronbach's alpha value was 0.94 at T1, and its McDonald's omega value was 0.94 at T1.

Self-Stigma Content

At T1 and T2, self-stigma content was assessed using the 22-item Affiliate Stigma Scale (Mak & Cheung, 2008). On a 4-point Likert scale where 1 = *strongly disagree* and 4 = *strongly agree*, the participants rated the degree to which they endorsed self-stigmatizing thoughts (e.g., "Having a family member with ASD makes me think that I am incompetent compared to other people."). The item ratings were averaged, such that higher scores indicated more negatively valenced content of self-stigmatizing thoughts. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Chan & Lam, 2018). In the present study, its Cronbach's alpha values were 0.94 at T1 and 0.95 at T2, and its McDonald's omega values were 0.94 at T1 and 0.95 at T2.

Self-Stigma Process

At T1 and T2, self-stigma process was assessed using the 8-item Self-stigmatizing Thinking's Automaticity and Repetition Scale (Chan & Lam, 2018). On a 5-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*, the participants rated the degree to which they thought about their self-stigmatizing thoughts frequently and habitually (e.g., "Thinking negatively about my identity as a parent of a child with ASD is something I do every day."). The item ratings were averaged, such that higher scores indicated more habitual emergence of self-stigmatizing thoughts. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Chan & Lam, 2018). In the present study, its Cronbach's alpha values were 0.95 at T1 and 0.95 at T2, and its McDonald's omega values were 0.95 at T1 and 0.95 at T2.

Parenting Stress

At T1 and T2, parenting stress was assessed using the 15-item Parenting Stress Index-Short Form (Abidin, 1995; Yeh et al., 2001). On a 5-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*, the participants rated the degree to which they experienced stress in the parenting process (e.g., "I feel trapped by my responsibilities as a parent."). The item ratings were averaged, such that higher scores indicated higher levels of parenting stress. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Zaidman-Zait

et al., 2011). In the present study, its Cronbach's alpha values were 0.91 at T1 and 0.92 at T2, and its McDonald's omega values were 0.91 at T1 and 0.91 at T2.

Depressive Symptoms

At T1 and T2, depressive symptoms were assessed using the 9-item Patient Health Questionnaire (Kroenke et al., 2001). On a 4-point Likert scale where 0 = *not at all* and 3 = *nearly every day*, the participants rated the degree to which they experienced symptoms of depression (e.g., "Over the last two weeks, how often have you been bothered by feeling down, depressed, or hopeless?"). The item ratings were summed, such that higher scores indicated higher levels of depressive symptoms. In past studies, this scale had good psychometric properties and demonstrated good validity and reliability (Chan et al., 2018a). In the present study, its Cronbach's alpha values were 0.90 at T1 and 0.92 at T2, and its McDonald's omega values were 0.91 at T1 and 0.92 at T2.

Data Analyses

Data analyses were executed in four stages using IBM SPSS Statistics 27.0. First, descriptive statistics were performed to calculate the ranges, means, and standard deviations of the variables. Next, correlations were computed to evaluate the interrelations among the variables. Then, hierarchical regression analyses were conducted for each group of the independent (i.e., experienced discrimination and anticipated discrimination at T1), moderator (i.e., nonattachment at T1), and dependent variables (i.e., self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T2) of the hypotheses. In each regression model, the demographic and autoregressive control variables were entered in block 1, the independent and moderator variables were entered in block 2, and the interaction term was entered in block 3. A significant interaction term indicated the presence of a significant moderation effect of nonattachment. Last, simple slope tests were carried out for significant interactions to examine whether the associations of the independent variables with the dependent variables were significant when the level of the moderator was high (1 *SD* above the mean) versus low (1 *SD* below the mean).

Results

Tables 1 and 2 present the results of descriptive and correlation analyses, respectively. Both experienced discrimination and anticipated discrimination at T1 were correlated positively with self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T1 and T2 ($ps < 0.001$), whereas nonattachment at T1 was correlated negatively with self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T1 and T2 ($ps < 0.001$).

Table 1 Descriptive statistics of variables

	Range	*M*	*SD*
Experienced discrimination (T1)	1.00 – 5.00	2.46	0.94
Anticipated discrimination (T1)	1.00 – 6.00	3.48	1.26
Nonattachment (T1)	1.00 – 6.00	4.02	0.95
Self-stigma content (T1)	1.00 – 4.00	2.33	0.66
Self-stigma content (T2)	1.00 – 4.00	2.35	0.66
Self-stigma process (T1)	1.00 – 5.00	2.88	0.88
Self-stigma process (T2)	1.00 – 5.00	2.87	0.91
Parenting stress (T1)	1.00 – 5.00	2.81	0.71
Parenting stress (T2)	1.00 – 5.00	2.82	0.71
Depressive symptoms (T1)	0.00 – 27.00	6.60	5.70
Depressive symptoms (T2)	0.00 – 27.00	6.44	5.86

Table 3 summarizes the results of hierarchical regression analyses examining the roles of experienced discrimination and nonattachment at T1 in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T2. The variance inflation factors in the regression models were below 2.50, indicating low multi-collinearity (Thompson et al., 2017). In the models, after controlling for demographic factors and autoregressive effects as well as experienced discrimination and nonattachment at T1, the interaction term of experienced discrimination by nonattachment at T1 explained additional variance in self-stigma content (1%; $p = 0.005$), self-stigma process (1%; $p = 0.03$), parenting stress (1%; $p = 0.03$), and depressive symptoms (1%; $p = 0.02$) at T2. These significant interaction effects indicated the presence of significant moderation effects of nonattachment. To probe the patterns of these significant moderation effects, we performed simple slope analyses to examine separately the associations of experienced discrimination with the cognitive and affective consequences for parents with high versus low levels of nonattachment. The findings are shown in Fig. 1. The associations of experienced discrimination with self-stigma content, self-stigma process, parenting stress, and depressive symptoms were weaker in parents with high nonattachment than in those with low nonattachment.

Table 4 summarizes the results of hierarchical regression analyses examining the roles of anticipated discrimination and nonattachment at T1 in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms at T2. The variance inflation factors in the regression models were below 2.50, indicating low multi-collinearity (Thompson et al., 2017). In the models, after controlling for demographic factors and autoregressive effects as well as anticipated discrimination and nonattachment at T1, the

Table 2 Correlations among variables

	Experienced discrimination (T1)	Anticipated discrimination (T1)	Nonattachment (T1)
Self-stigma content (T1)	.64***	.68***	−.41***
Self-stigma content (T2)	.54***	.57***	−.37***
Self-stigma process (T1)	.54***	.59***	−.56***
Self-stigma process (T2)	.48***	.48***	−.48***
Parenting stress (T1)	.53***	.52***	−.45***
Parenting stress (T2)	.49***	.48***	−.38***
Depressive symptoms (T1)	.48***	.43***	−.53***
Depressive symptoms (T2)	.42***	.34***	−.43***

*** $p < 0.001$

interaction term of anticipated discrimination by nonattachment at T1 explained additional variance in self-stigma content (1%; $p = 0.009$), self-stigma process (1%; $p = 0.03$), parenting stress (2%; $p < 0.001$), and depressive symptoms (1%; $p = 0.02$) at T2. These significant interaction effects indicated the presence of significant moderation effects of nonattachment. To probe the patterns of these significant moderation effects, we performed simple slope analyses to examine separately the associations of anticipated discrimination with the cognitive and affective consequences for parents with high versus low levels of nonattachment. The findings are shown in Fig. 2. The associations of anticipated discrimination with self-stigma content, self-stigma process, parenting stress, and depressive symptoms were weaker in parents with high nonattachment than in those with low nonattachment.

Discussion

The present study examined the longitudinal associations of experienced and anticipated discrimination with detrimental psychological consequences for parents of children with ASD, and tested whether these associations would be moderated by nonattachment. Consistent with our hypotheses, both experienced and anticipated discrimination were linked longitudinally to self-stigma content, self-stigma process, parenting stress, and depressive symptoms among parents of children with ASD. These longitudinal linkages, however, were moderated by nonattachment; in the long term, more nonattached parents were less affected, psychologically, by experienced and anticipated discrimination. Importantly, our study reveals that nonattachment may mitigate the longitudinal associations of discrimination with detrimental psychological consequences. These findings suggest that nonattachment may shield parents from the deleterious psychological outcomes of discrimination.

Building upon previous cross-sectional studies of the impact of stigma on well-being (Chan & Lam, 2016, 2017, 2018; Chan & Leung, 2021), our longitudinal study revealed the long-term influences of experienced and anticipated discrimination on self-perceptions and emotional adjustments of parents of children with ASD. Specifically, our findings show that the perceptions of actual and probable exposure to discrimination may heighten the severity and frequency of self-stigmatizing thinking and increase the negative feelings of distress and depression among parents of children with ASD. These findings indicate that experienced and anticipated discrimination are prominent risk factors for negative psychological outcomes for parents of children with ASD (Deguchi et al., 2021; Liao et al., 2019; Papadopoulos et al., 2019).

Both experienced and anticipated discrimination were linked to detrimental psychological consequences for parents of children with ASD. These linkages suggest that, in addition to the societal enactment of courtesy stigma, the personal expectation of courtesy stigma can also reduce psychological well-being. In view of the psychological harm of experienced and anticipated discrimination, practitioners should address both of these forms in anti-stigma interventions. To reduce experienced discrimination, practitioners may conduct community education to mitigate courtesy stigma in society (Mak & Kwok, 2010). Also, to lessen anticipated discrimination, practitioners may assist parents to cope with the potential harm of courtesy stigma and lessen their future-related worries using such evidence-based approaches as mindfulness (Kabat-Zinn, 2003; Teasdale et al., 2000) and psychological flexibility training (Hayes et al., 2006; Masuda et al., 2012).

As discrimination may affect well-being adversely, it is vital to help parents of children with ASD develop the capacity to resist stigma and build resilience. Previous studies have shown that nonattachment may serve as a protective factor buffering against the detrimental effects of interpersonal rejection (Joss et al., 2020). Expanding upon these findings, our study revealed the shielding effects of nonattachment against discrimination. Specifically, our findings

Table 3 Hierarchical regression analyses examining the interactions between experienced discrimination and nonattachment in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms

	Self-stigma content (T2)			Self-stigma process (T2)			Parenting stress (T2)			Depressive symptoms (T2)		
	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3
Demographic controls, β												
Parental gender (T1)	−.01	−.02	−.02	−.03	−.03	−.04	.01	−.00	−.00	.05	.04	.03
Parental age (T1)	−.03	−.03	−.03	.02	.02	.02	−.05	−.04	−.04	.05	.04	.04
Child gender (T1)	−.08*	−.08*	−.08*	−.02	−.02	−.02	−.06	−.06	−.05	−.04	−.03	−.02
Child age (T1)	.00	.01	.01	−.06	−.05	−.04	.01	.02	.03	−.07	−.06	−.06
Child intellectual disability (T1)	.02	.02	.02	−.01	−.02	−.01	.04	.02	.03	.04	.02	.03
Autoregressive controls, β												
Self-stigma content (T1)	.70***	.59***	.61***									
Self-stigma process (T1)				.66***	.49***	.50***						
Parenting stress (T1)							.67***	.56***	.58***			
Depressive symptoms (T1)										.68***	.59***	.57***
Main effects, β												
Experienced discrimination (T1)		.13**	.12**		.17***	.16***		.16***	.15***		.11*	.11**
Nonattachment (T1)		−.07	−.05		−.15**	−.12**		−.07	−.05		−.08	−.06
Interaction effects, β												
Experienced discrimination (T1) × Nonattachment (T1)			−.10**			−.09*			−.09*			−.09*
ΔR^2	.52***	.02**	.01**	.44***	.04***	.01*	.47***	.02***	.01*	.47***	.01**	.01*

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

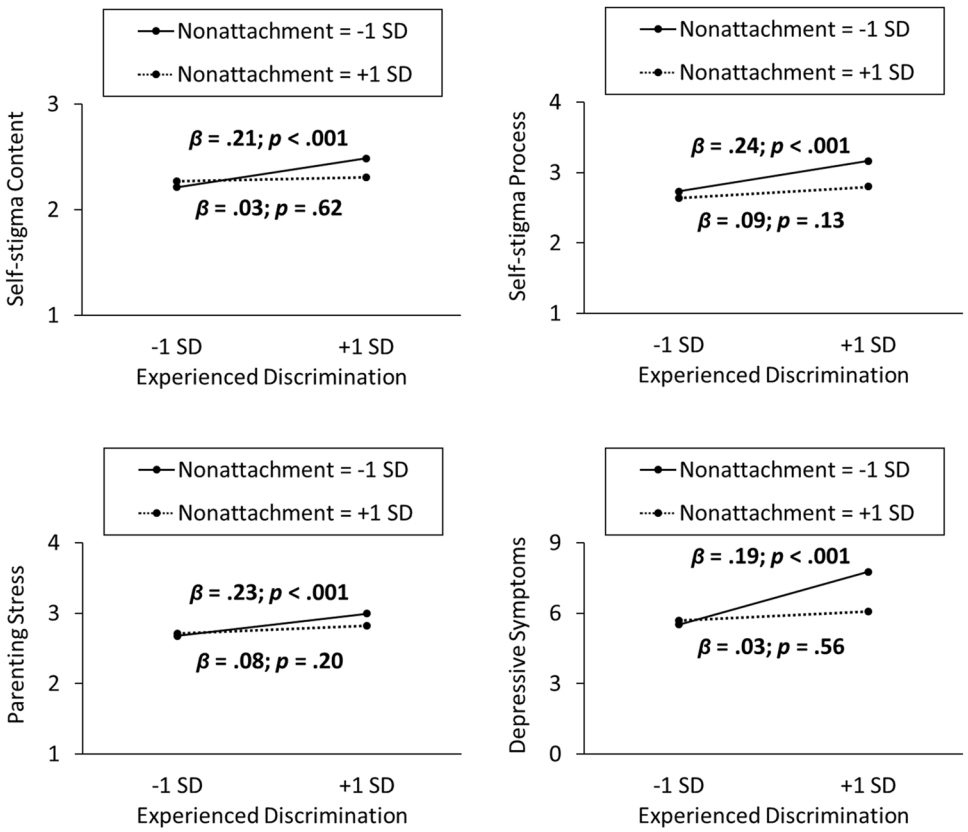

Fig. 1 Plots of the interactions between experienced discrimination and nonattachment in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms

suggest that, as nonattached parents of children with ASD may adopt an objective stance toward social disapproval and keep a safe emotional distance from social threat, they may appraise their stigma-related setbacks as less ego-threatening, leading to fewer negative self-thoughts and less affective distress (Sahdra et al., 2010, 2016).

In accordance with previous studies reporting the role of nonattachment in alleviating self-coldness (Whitehead et al., 2018b), our study found that nonattachment was associated negatively with self-stigma. Also, building upon prior work showing that nonattachment could modulate and diminish psychological responses to social evaluative threat (Arch et al., 2016), our findings indicated that nonattachment moderated and mitigated the links of experienced and anticipated discrimination to self-stigma content and process. Such shielding effects of nonattachment suggest that parents with the capacity for nonattachment may be less impacted by community stigma, resulting in less endorsement of self-stigmatizing thoughts and less recurrence of self-stigmatizing thinking.

Previous research has found positive associations of experienced and anticipated discrimination with parenting stress and depressive symptoms among parents of children with ASD (Chan & Lam, 2016, 2017; Chan & Leung, 2021). However, our study found that these associations could be modulated by nonattachment. One possible reason for this finding is that nonattachment might enhance adaptive emotion regulation and thereby facilitate stigma coping (Sahdra et al., 2010). Indeed, prior studies have shown that nonattached individuals are better able to let go of their negative social experiences (Whitehead et al., 2018a, b, 2020). Therefore, nonattached parents may be less likely to ruminate and worry about their exposure to societal discrimination, and thus suffer lower levels of distress and depression (Lamis & Dvorak, 2014). Future studies should investigate if the protective effects of nonattachment against stigma-related negative emotions may be explained by emotion regulation skills.

Our study highlights the moderating role of nonattachment in the links of discrimination with psychological maladjustment among parents of children with ASD. Our findings point to the potential utility of targeting parents' nonattachment to protect them from the adverse psychological impact of discrimination. Building upon our findings, future studies may investigate whether increasing nonattachment can help parents cope with discrimination and improve their well-being. Specifically, future studies may apply mindfulness-based interventions (e.g., mindfulness-based stress reduction) to help parents build their insights into the transient and subjective natures of experiences and cultivate their attitudes of acceptance and openness, thereby enhancing nonattachment (Bhambhani & Cabral, 2016; Whitehead

Table 4 Hierarchical regression analyses examining the interactions between anticipated discrimination and nonattachment in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms

	Self-stigma content (T2)			Self-stigma process (T2)			Parenting stress (T2)			Depressive symptoms (T2)		
	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3	Block 1	Block 2	Block 3
Demographic controls, β												
Parental gender (T1)	−.01	−.02	−.02	−.03	−.03	−.03	.01	−.00	−.00	.05	.04	.04
Parental age (T1)	−.03	−.02	−.03	.02	.02	.02	−.05	−.04	−.04	.05	.05	.04
Child gender (T1)	−.08*	−.09*	−.08*	−.02	−.02	−.02	−.06	−.06	−.04	−.04	−.03	−.02
Child age (T1)	.00	.00	.01	−.06	−.05	−.04	.01	.02	.03	−.07	−.07	−.06
Child intellectual disability (T1)	.02	.02	.03	−.01	−.01	−.01	.04	.02	.03	.04	.03	.03
Autoregressive controls, β												
Self-stigma content (T1)	.70***	.57***	.56***									
Self-stigma process (T1)				.66***	.48***	.48***						
Parenting stress (T1)							.67***	.56***	.59***			
Depressive symptoms (T1)										.68***	.61***	.60***
Main effects, β												
Anticipated discrimination (T1)		.15**	.16***		.15**	.16***		.15***	.16***		.05	.06
Nonattachment (T1)		−.08*	−.06		−.16***	−.14**		−.08	−.04		−.08	−.07
Interaction effects, β												
Anticipated discrimination (T1) × Nonattachment (T1)			−.09**			−.08*			−.13***			−.09*
ΔR^2	.52***	.02***	.01**	.44***	.03***	.01*	.47***	.02***	.02***	.47***	.01	.01*

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

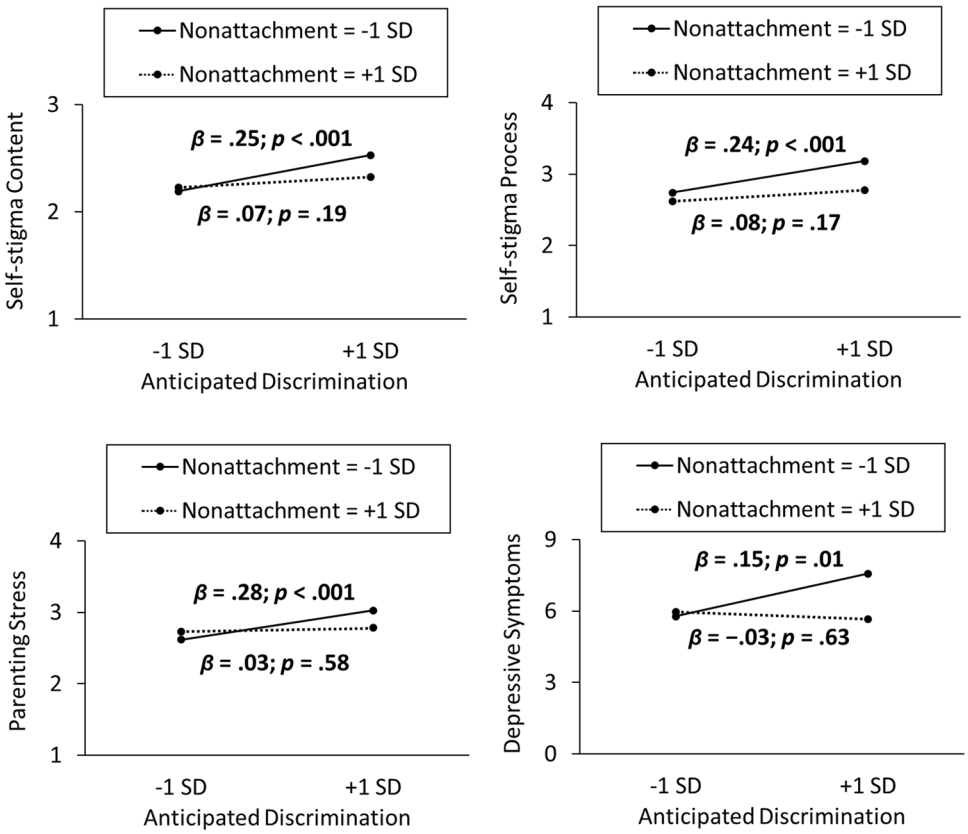

Fig. 2 Plots of the interactions between anticipated discrimination and nonattachment in predicting self-stigma content, self-stigma process, parenting stress, and depressive symptoms

et al., 2020). With higher levels of nonattachment, parents may be better able to let go of, and not cling to, their undesirable and discriminatory experiences (Joss et al., 2020).

Limitations and Future Research

Our findings should be considered cautiously in the context of several limitations. First, our measures were presented in a fixed order in the questionnaires, which might have been affected by order effect. Future studies should randomize the order of presentation of measures. Second, as all our measures were self-reported by parents, they might have been susceptible to single reporter and common method biases. Future studies should collect multi-method (e.g., questionnaire, interview, observation) and multi-informant (e.g., self-report and spouse-report) data to extend our findings. Third, as our sample comprised mainly mothers and sons, it could not illustrate the gender diversity of parents and children. Also, as most of the children had intellectual disabilities, this could affect the generalizability of our findings. Future studies should recruit representative families to reexamine our hypotheses. Fourth, our use of longitudinal analyses and inclusion of autoregressive controls allowed us to examine the directionality of effects among variables, but conclusions about causal relations cannot be made based on correlational data. Future studies should employ experimental or intervention designs to disentangle the underlying causal pathways of the associations documented here.

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Author Contribution KKSC developed the research question, analyzed the data, and wrote and revised the paper. CCHY and ZW collaborated in writing and revising the paper. All authors approved the final version of the paper for publication.

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Data Availability The data of this study are available from the corresponding author upon reasonable request.

Declarations

Ethics Approval This study was approved by the Human Research Ethics Committee of The Education University of Hong Kong.

Informed Consent Written informed consent was obtained from all participants prior to participation.

Conflict of Interest The authors declare no competing interests.

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