Affiliate Stigma Among Caregivers of Children with Autism Spectrum Disorder: The Role of Coping Strategies and Perceived Social Support

Salma Salami¹* and Eman Alhalal¹

¹Nursing College, King Saud University, Riyadh 3067-86518, Saudi Arabia

Correspondence to:
Salma Salami*, e-mail: ssalami@moh.gov.sa

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ABSTRACT
Caregivers of children with autism spectrum disorder (ASD) may experience stigma due to ASD-related symptoms. However, factors such as coping strategies and perceived social support might impact the affiliate stigma they experience. To date, no research has explored the association between ASD symptom severity and affiliate stigma, considering the role of coping strategies and perceived social support in different cultural contexts. This study aimed to test a hypothesized model in which coping strategies and perceived social support mediate the association between children’s ASD symptom severity and caregivers’ affiliate stigma. A cross-sectional study was conducted among 392 caregivers of children with ASD in Saudi Arabia. Data were collected using structured interviews with eligible caregivers at a developmental and behavioral disorder clinic, five daycare centers, and three schools. The hypothesized model was tested using structural equation modeling. The study found that caregivers of children with ASD reported experiencing affiliate stigma. Additionally, as the severity of children’s ASD symptoms increased, caregivers’ perceptions of affiliate stigma also increased. However, both maladaptive coping strategies and perceived social support mediated this relationship. The findings emphasize the importance of addressing the psychosocial needs of caregivers of children with ASD, particularly by decreasing the use of maladaptive coping strategies and providing social support to minimize their experience of affiliate stigma.

KEYWORDS
stigma, coping, autism spectrum disorder, affiliate stigma, social support, caregiver

INTRODUCTION
Autism spectrum disorder (ASD), which is categorized as a developmental disability, is a lifelong neurodevelopmental disorder characterized by deficits in social interaction and communication as well as repetitive patterns of behaviors and interests (American Psychiatric Association [APA], 2013). In various cultural contexts, children with ASD are adversely affected by stigma (World Health Organization, 2023), which refers to discrimination, biased beliefs, and stereotypes against marginalized subgroups (Corrigan, 2000). These ASD children may not display apparent physical markers, so when they exhibit socially inappropriate behaviors, such as flapping, twirling, or having tantrums in public, they are often wrongly accused of being willfully disobedient and disruptive (Botha et al., 2022). Consequently, they may face humiliation, neglect, or exclusion by their peers (Kinnear et al., 2016). Furthermore, they may be unwelcome or treated with less empathy by their teachers and healthcare providers in educational and healthcare facilities (Broady et al., 2017; Salleh et al., 2020).

Families of children with disabilities often encounter stigma due to a lack of understanding about disabilities, fear of the unknown, and prevalent stereotypes and prejudices (Çaynak et al., 2022). Specifically, in the context of ASD, caregivers may experience courtesy stigma (i.e., public stigma) and feel blamed as bad parents (Yip and Chan, 2022), which is exacerbated by the absence of ASD physical disability and the presence of behavioral problems (Patra and Kumar Patro, 2019; Salleh et al., 2020). Repeated exposure to courtesy stigma can cause caregivers to internalize negative attitudes and develop affiliate stigma (also known as self-stigma; Mak and Cheung, 2008). This occurs when caregivers of children with ASD accept the negative stereotypes held by the public as part of their own identity (Mak and Kwok, 2010; Mitter et al., 2019), which inhibits their readiness to engage in social activities (Broady et al., 2017).
Additionally, affiliate stigma can lead caregivers to hide their children’s conditions, withdraw from social relationships, or isolate themselves from individuals who stigmatize them (Mitter et al., 2019), which lowers their mental well-being (Papadopoulos et al., 2019). Thus, it is important to look at the factors that predict affiliate stigma among caregivers.

One of the contributing factors of affiliate stigma among caregivers is the severity of their children’s ASD-related symptoms and behaviors (Kinnear et al., 2016; Ma et al., 2023). Previous studies in India (Patra and Kumar Patro, 2019) and China (Lyu et al., 2022) found a significant positive relationship between children’s ASD symptom severity and caregivers’ experience of affiliate stigma. People’s reactions to severe socially inappropriate behaviors often result in caregivers perceiving and internalizing stigma (Broady et al., 2017; Salleh et al., 2020). However, the effect of ASD symptom severity on affiliate stigma among caregivers has not been consistently observed. For example, Alshaigi et al. (2020) found no association between ASD symptom severity and affiliate stigma perceived by Saudi parents. Thus, the relationship between ASD symptom severity and stigma among caregivers of children with ASD remains unclear.

The coping strategies that caregivers utilize when caring for children with ASD can play a role in determining the level of affiliate stigma they may experience. Coping is defined as cognitive and behavioral efforts to manage both internal and external demands that arise from a stressful situation (Lazarus and Folkman, 1984). Coping strategies can be divided into two categories: adaptive coping strategies, which are used to directly confront stressors, and maladaptive coping strategies, which are employed to reduce the resulting emotional distress (Lazarus and Folkman, 1984). Caregivers of children with ASD utilize various coping strategies. They may use maladaptive coping strategies, such as social withdrawal and concealment, which perpetuate the experience of affiliate stigma (Mitter et al., 2019). They may also adopt adaptive coping strategies, including practicing religion, seeking social support, actively searching for information, and engaging in education and advocacy efforts (Dababnah and Parish, 2013; Broady et al., 2017). By employing adaptive coping strategies, caregivers can avoid becoming entangled in societal judgments and misconceptions about their children’s behaviors (Broady et al., 2017). However, notably, no prior research has explored whether adaptive or maladaptive coping strategies play a mediating role in the relationship between ASD symptom severity and affiliate stigma.

Perceived social support has also been shown to be significantly negatively associated with affiliate stigma among caregivers of children with ASD (Mak and Kwok, 2010; Recio et al., 2020). This refers to individuals’ perceptions and assessments of the availability and adequacy of support from their family members, friends, and significant others (Zimet et al., 1988). Research has found that perceived social support can act as a partial mediator in decreasing the affiliate stigma resulting from discrimination (Recio et al., 2020). In their study, Mak and Kwok (2010) found that support from significant others and friends significantly reduced affiliate stigma among caregivers of children with ASD (Mak and Kwok, 2010). In another study, the association between a higher level of affiliate stigma and an increased sense of stress was mediated by a decrease in perceived support from family but not from friends or significant others (Lovell and Wetherell, 2019). In other studies, caregivers felt unsupported by their families, friends, teachers, and even healthcare professionals, which exacerbated their experiences of societal rejection and intolerance toward their children with ASD (Broady et al., 2017; Salleh et al., 2020). Thus, it is essential to assess the impact of perceived social support on caregivers’ affiliate stigma experience.

The sociocultural context may shape affiliate stigma among caregivers of children with ASD (Mitter et al., 2019). In particular, cultures that emphasize collectivism tend to stigmatize individuals who deviate from societal norms more than cultures that prioritize individualism (Papadopoulos et al., 2013). Parents in collectivist cultures often feel guilty when their children have ASD, sometimes stemming from the notion that their children’s condition is a punishment from God linked to their past actions (Dababnah and Parish, 2013; Salleh et al., 2020), that the evil eye and black magic cause ASD (Alqahtani, 2012), or that ASD is caused by a bad seed rather than a neurodevelopmental disorder (Mitter et al., 2019). In addition, previous studies have shown that there is often a greater inclination toward social distance from children with ASD in countries with collectivist cultures, such as Lebanon (Gillespie-Lynch et al., 2019), Japan (Someki et al., 2018), and South Korea (Kim et al., 2022), than in countries with individualist cultures that value independence and distinctiveness, such as the United States. Cultural contexts play an important role in shaping caregivers’ beliefs about ASD and impact how caregivers utilize available resources (de Leeuw et al., 2020). For example, in Arab culture, a higher proportion (12%) of caregivers of children with ASD consider concealing the diagnosis, reducing outside interactions, or denying the diagnosis as the most effective ways to cope, while in American culture, only 2% consider these their best options (Ayyash et al., 2023). Thus, there is a need to consider how coping strategies and social support affect affiliate stigma among caregivers of children with ASD in different cultural contexts.

Most studies in this area have been conducted in Western and Asian countries (Kinnear et al., 2016; Chan and Lam, 2018; de Leeuw et al., 2020). In Saudi Arabia, only one recent study examined the prevalence and possible causes of stigma (Alshaigi et al., 2020). To date, no study has investigated how coping strategies and perceived social support mediate the association between ASD symptom severity and stigma among caregivers of children with ASD. Therefore, this study aimed to investigate the level of affiliate stigma among caregivers of children with ASD in Saudi Arabia and to examine whether adaptive and maladaptive coping strategies and perceived social support mediate the relationship between children’s ASD symptom severity and caregivers’ experiences of affiliate stigma.

Based on the literature described earlier, it was hypothesized that ASD symptom severity is positively associated with the affiliate stigma level among caregivers of children with ASD and that engaging in fewer maladaptive coping strategies and more adaptive coping strategies, as well as perceiving higher levels of social support, mediates and...
The proposed model is presented in Figure 1.

**METHODS**

**Design and settings**

A cross-sectional study was conducted from April to July 2023 in the following two cities in Saudi Arabia: Riyadh, the capital city with a population of 8 million, and Jizan, a smaller city in southern Saudi Arabia with a population of 1.4 million (General Authority of Statistics, 2023). The targeted settings were as follows: a developmental and behavioral disorder clinic offering free healthcare services to atypical children and their families; five daycare centers providing speech therapy, behavioral therapy, and other therapeutic rehabilitation sessions; and three schools offering academic education to students with special needs, including children with ASD.

**Participants**

Primary caregivers of children with ASD were recruited via convenience sampling. A primary caregiver was defined as a family member who is over 18 years old and has the main responsibility of providing unpaid primary care to a child with ASD. Caregivers were selected using the following three inclusion criteria: (i) they provide care to children with ASD aged 2 to 18 years, (ii) the child has been diagnosed with ASD by a licensed physician, and (iii) there are no other children with disabilities in the family. The reason for including caregivers of children with ASD aged over 2 years was that the diagnosis of ASD is dependent on children’s social deficits and behavioral issues, which are difficult to diagnose in children younger than 2 years (Lord et al., 2006). The child’s ASD diagnosis was confirmed through the child’s medical report.

The required sample size was at least 200 participants per the general guideline for structural equation modeling (SEM) (Kline, 2016). Out of the 450 caregivers who were approached, 392 agreed to participate, resulting in a response rate of 87%.

**Procedures**

At each facility, social workers notified the families of children with ASD about the study and, when they agreed, referred them to the researchers. Eligible caregivers read and signed a consent form prior to data collection. The consent statement was read aloud to caregivers who could not read or write, and a thumbprint was obtained as a sign of their consent. Structured interviews using standardized questions about caregivers’ demographic characteristics, coping strategies, perceived social support, and affiliate stigma, as well as children’s ASD symptom severity, were conducted in a private room at each facility.

**MEASUREMENTS**

**Sociodemographic data**

The caregivers who met the requirements were surveyed to gather information about their sociodemographic characteristics, including sex, age, nationality, marital status, educational level, occupation, income, relationship with the child,
and location. For children with ASD, data on age and sex were also collected.

**ASD symptom severity**

The Childhood Autism Rating Scale–Second Edition (CARS-2; Schopler et al., 1980), was used in this study. It consists of 15 domains that assess a child’s functioning in areas such as social interaction, communication, and sensory responsiveness. Each domain in the CARS-2 is evaluated using a single item, which is rated on a 4-point Likert scale ranging from 1 (normal for the child’s age) to 4 (severely abnormal for the child’s age). The maximum possible score is 60. The CARS-2 has high internal reliability, with a Cronbach’s alpha (α) value of 0.94 (Schopler et al., 1980). The Arabic version of the CARS-2 was forward and backward translated from English (Akoury-Dirani et al., 2013). In a previous study conducted in Saudi Arabia, its psychometric properties were assessed among 301 children with ASD aged 2 to 12 years, and it showed acceptable reliability, with a Cronbach’s alpha value of 0.79 (Alotaibi and Alotaibi, 2021). In this study, the CARS-2 also showed good internal consistency (α = 0.88).

**Coping strategies**

The Brief Coping Orientation to Problem Experience (Brief COPE), a self-report scale (Carver, 1997), was used to assess caregivers’ coping strategies. It consists of 28 items that measure both adaptive and maladaptive coping strategies. Adaptive coping strategies are assessed through 16 items, such as active coping and planning. Conversely, maladaptive coping strategies are measured through 12 items, such as self-distraction and denial (Meyer, 2001). Two items related to substance use were not used in this study. The responses to all items are rated on a 4-point Likert scale, ranging from 1 (I have not been doing this at all) to 4 (I have been doing this a lot). The overall scores are calculated separately for adaptive and maladaptive coping strategies, with higher scores indicating a higher frequency of these coping strategies. The reliability and validity of the Brief COPE have been established among caregivers of children with ASD in Singapore (Lai et al., 2015) and the United States (Khanne et al., 2011), with α value ranging from 0.69 to 0.92. The Arabic version of the Brief COPE was forward and backward translated from English (Alghamdi, 2020). In this study, the Brief COPE showed good internal consistency (α = 0.86) for adaptive coping strategies and (α = 0.83) for maladaptive coping strategies.

**Perceived social support**

The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess the levels of perceived support from significant others, family, and friends (Zimet et al., 1988). It consists of 12 items rated on a 7-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). The total score is computed by averaging the scores of all items, with higher scores indicating greater levels of perceived social support (Zimet et al., 1988). The MSPSS was originally validated, and its psychometric properties were tested among university students (Zimet et al., 1988). The MSPSS has been widely used to assess social support among caregivers of children with ASD in different countries, including the United States (McGrew and Keyes, 2014), China (Lu et al., 2018), and Lebanon (Merhi and Kazarian, 2012), with good internal consistency based on a Cronbach’s alpha value of ≥0.80. The Arabic version of the MSPSS was forward and backward translated from English (Aroian et al., 2010). The factor analysis of the Arabic version confirmed three factors: family, friends, and significant others, with good reliability based on α values of 0.82, 0.86, and 0.85, respectively (Merhi and Kazarian, 2012). This study used perceived social support as a latent variable with three factors (indicators): support from significant others, family, and friends, which showed good internal consistency based on α values of 0.93, 0.89, and 0.91, respectively.

**Affiliate stigma**

The adapted Affiliate Stigma Scale was used to evaluate affiliate stigma (Zhou et al., 2018). It was developed from the 22-item Affiliate Stigma Scale (Mak and Cheung, 2008) that measures the extent of internalized stigma among caregivers of individuals with intellectual disabilities or mental illnesses. The original scale assesses three domains: cognitive (seven items), affective (seven items), and behavioral (eight items). The adapted version comprises 12 items (Zhou et al., 2018) encompassing two factors: caregivers’ internal feelings and avoidant social behaviors. The items are scored on a 6-point Likert scale ranging from 1 (not like me at all) to 6 (like me very much). The total score is computed for all items, and higher scores indicate higher levels of affiliate stigma. The adapted Affiliate Stigma Scale has been used in China, with good internal reliability α values of 0.80 and 0.78 for caregivers’ internal feelings and avoidant social behaviors, respectively (Zhou et al., 2018). In this study, the scale was translated into Arabic by a bilingual translator after the content validity was assessed. The scale showed good internal reliability (α = 0.88).

**Ethical approval**

The study received ethical approval from King Saud University (#KSU-HE-23-541) as well as from the Ministry of Health (#2350) and the Ministry of Education (#4401087195). The participants provided informed consent after receiving comprehensive information about the study’s aims, procedures, and potential risks and benefits, along with the researchers’ contact details. Participant privacy was maintained, as the interviews were conducted in private rooms, and no identifiable personal information was collected. The participants were assured that their involvement was entirely voluntary. They were also informed of
their right to withdraw consent or decline participation without any negative consequences.

Data analysis

The statistical analyses were conducted using IBM SPSS version 23 for Windows (IBM Corporation, Armonk, NY, USA). Prior to the analysis, the data were cleaned to ensure that there were no missing data. Descriptive statistics were utilized to summarize the demographic characteristics and study variables. Skewness and kurtosis analyses were conducted to evaluate the normal distribution of each variable in the study. According to Kline (2016), data can be considered not normally distributed if the skewness value is >3 and the kurtosis value is >10. Correlation analyses were conducted to examine the relationships between the demographic variables and the study variables. A SEM was conducted using Mplus version 8.10 (Muthén & Muthén, Los Angeles, CA, USA) to test the hypothesized model. SEM is an advanced regression technique that evaluates whether data collected from samples align with proposed models (Kline, 2016). It estimates the relationships between observed and latent variables, including direct, indirect, and mediating effects (Kline, 2016). A well-fitting model is indicated by several fit indices, including nonsignificant chi-square statistics, comparative fit index (CFI) and Tucker–Lewis index (TLI) higher than 0.90, root mean square error of approximation (RMSEA) of ≤0.05, standardized root mean square residual (SRMR) of ≤0.08, and root mean square residual of 1.0 (Kline, 2016).

RESULTS

Demographic characteristics

The participants’ demographic characteristics are shown in Table 1. The average age was 39.5 years [standard deviation (SD) = 8.65, range = 20-71 years]. The average household income was $2969.8 (SD = 1,851.6, range = $0-$9264.5). Most participants were women (58.4%, n = 229) and Saudis (92.4%, n = 363). Furthermore, 85% (n = 334) of the participants were married, 9.7% (n = 38) divorced, 2.8% (n = 11) widowed, and 2.3% (n = 9) unmarried. Regarding educational level, 40.2% (n = 158) of the participants had a college degree, but only 1.3% (n = 5) had a postgraduate degree. Approximately 44.3% (n = 174) were employed, while 46.8% (n = 184) were unemployed. Most of the children with ASD were boys (76.6%, n = 301), with an average age of 9.41 years (SD = 3.97, range = 3-18 years).

Study variables

Table 2 presents the descriptive analysis of the study variables. The mean score for ASD symptom severity was 38.91 (SD = 9.47, range = 15-59). The mean score for adaptive coping strategies was 44.22 (SD = 9.30, range = 19-62), while that for maladaptive coping strategies was 20.94 (SD = 9.30, range = 10-39). The mean total score for perceived social support was 4.37 (SD = 1.50, range = 1-7). Specifically, the mean scores for perceived social support from significant others, family, and friends were 4.90 (SD = 1.90, range = 1-7), 4.8 (SD = 1.7, range = 1-7), and 3.42 (SD = 1.75, range = 1-7), respectively. Furthermore, the mean score for the caregivers’ experience of affiliate stigma was 37.73 (SD = 14.81, range = 12-72).

Correlation analysis

Certain demographic characteristics of the caregivers were significantly correlated with the study variables. In particular, the caregivers’ age had a significant negative relationship

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean</th>
<th>SDs</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
<td>39.5</td>
<td>8.65</td>
<td>20-71</td>
</tr>
<tr>
<td>Income</td>
<td>2969.8</td>
<td>1851.6</td>
<td>$0-$9264.5</td>
</tr>
<tr>
<td>Age of the child, year</td>
<td>9.4</td>
<td>3.97</td>
<td>3-18</td>
</tr>
</tbody>
</table>

Table 1: Descriptive characteristics of the participants (n = 392).

Abbreviation: SD, standard deviation.
with the use of maladaptive coping strategies \( (r = -0.104, P = 0.03) \) and a significant positive relationship with the use of adaptive coping strategies \( (r = 0.100, P = 0.04) \), perceived social support \( (r = 0.130, P < 0.01) \), and affiliate stigma \( (r = 0.146, P < 0.01) \). In terms of sex, the female caregivers were less likely to use adaptive coping strategies \( (r = -0.111, P = 0.02) \), perceived less social support \( (r = -0.200, P < 0.01) \), and reported higher affiliate stigma levels \( (r = 0.146, P < 0.01) \) than did the male caregivers. Regarding educational level, a higher educational level was significantly negatively associated with the use of maladaptive coping strategies \( (r = -0.240, P < 0.01) \) and affiliate stigma \( (r = -0.249, P < 0.01) \) and positively associated with the use of adaptive coping strategies \( (r = 0.188, P < 0.01) \) and perceived social support \( (r = 0.290, P < 0.01) \). Conversely, monthly income showed a significant negative relationship with the use of maladaptive coping strategies \( (r = -0.306, P < 0.01) \) and a positive relationship with the use of adaptive coping strategies \( (r = 0.101, P = 0.04) \) and perceived social support \( (r = 0.286, P < 0.01) \). Table 3 further details the correlations among the study variables.

**Hypothesized model testing**

All study variables were used as manifest variables except for perceived social support, which was used as a latent variable with three indicators: support from significant others, family, and friends. The standardized factor loadings for the latent variable were also examined (Fig. 2), and these indicated the strength of the association between the latent variable and the observed indicators. The measurement model for perceived social support was acceptable, with the following fit indices: chi-square = 243.74, \( P < 0.05 \), CFI = 0.95, TLI = 0.93, RMSEA = 0.09 [90% confidence interval (CI) = 0.08-0.11], and SRMR = 0.05. The factor loadings ranged from 0.652 to 0.832.

The hypothesized model was tested using SEM after assessing the measurement model for the latent variable. The goodness-of-fit indices indicated that the model had a good fit with the data: chi-square = 10.65, \( P = 0.30 \), CFI = 0.99, TLI = 0.99, RMSEA = 0.02 (90% CI = 0.00-0.06), and SRMR = 0.01. Table 4 displays the effect estimates for these paths. The findings revealed that ASD symptom severity, adaptive coping strategies, maladaptive coping strategies, and perceived social support significantly predicted 55% of the variance in affiliate stigma among caregivers. Further, the caregivers of children with a higher ASD symptom severity experienced higher levels of affiliate stigma \( (\beta = 0.245, P < 0.05) \), utilized more maladaptive coping strategies \( (\beta = 0.358, P < 0.05) \), and reported less perceived social support \( (\beta = -0.362, P < 0.05) \) than did their counterparts. Conversely, no significant association was noted between the children’s ASD symptom severity and the caregivers’ utilization of adaptive coping strategies \( (\beta = 0.024, P = 0.637) \). The use of maladaptive coping strategies \( (\beta = 0.386, P < 0.05) \) was positively associated with affiliate stigma, while the use of adaptive coping strategies \( (\beta = -0.173, P < 0.05) \) and perceived social support \( (\beta = -0.278, P < 0.05) \) was negatively associated with affiliate stigma. Furthermore, both maladaptive coping strategies and perceived social support mediated the relationship between ASD symptom severity and affiliate stigma. In brief, ASD symptom severity had an indirect effect on affiliate stigma through the use of maladaptive coping strategies \( (\beta = 0.138, P < 0.05) \) and perceived social support \( (\beta = 0.101, P < 0.05) \). However, ASD symptom severity did not have a significant indirect effect on affiliate stigma through the use of adaptive coping strategies \( (\beta = -0.004, P = 0.641) \). Figure 2 shows the tested model with unstandardized (standardized) paths.

| Table 2: Descriptive analysis of the study variables \( (n = 392) \). |
|-----------------|---|---|---|---|---|
| Variables       | Mean | SD  | Range  | Reliability | Skewness | Kurtosis |
| ASD symptom severity | 38.91 | 9.47 | 15-59 | 0.88 | 0.224 | 0.246 |
| Adaptive coping strategies | 44.22 | 9.30 | 19-62 | 0.86 | 0.308 | 0.389 |
| Maladaptive coping strategies | 20.94 | 6.76 | 10-39 | 0.83 | 0.080 | 1.013 |
| Perceived social support | 4.37 | 1.50 | 1-7 | 0.92 | 0.396 | 0.789 |
| Significant others | 4.90 | 1.90 | 1-7 | 0.82 | 0.702 | 0.594 |
| Family | 4.80 | 1.70 | 1-7 | 0.86 | 0.545 | 0.695 |
| Friends | 3.42 | 1.75 | 1-7 | 0.85 | 0.114 | 1.091 |
| Affiliate stigma | 37.73 | 14.81 | 12-72 | 0.89 | 0.131 | 0.897 |

Abbreviations: ASD, autism spectrum disorder; SD, standard deviation.

| Table 3: Correlations among the study variables. |
|-----------------|---|---|---|---|---|
|                | 1  | 2  | 3  | 4  | 5  |
| 1. ASD symptom severity | 1  | 0.024 | 0.358 | -0.335 | 0.480 |
| 2. Adaptive coping strategies | 0.024 | 1  | 0.013 | 0.452 | -0.301 |
| 3. Maladaptive coping strategies | 0.358 | 0.013 | 1  | -0.323 | 0.557 |
| 4. Perceived social support | -0.335 | 0.452 | -0.323 | 1  | -0.535 |
| 5. Affiliate stigma | 0.480 | -0.301 | 0.557 | -0.535 | 1  |

**Correlation is significant at the 0.01 level (two-tailed).**

Abbreviation: ASD, autism spectrum disorder.
To the researchers’ knowledge, this study is the first to investigate affiliate stigma and the potential influence of ASD symptom severity on affiliate stigma through coping strategies and perceived social support as mediators among caregivers of children with ASD in Saudi Arabia. The findings indicate that caregivers reported experiencing affiliate stigma. Additionally, both maladaptive coping strategies and perceived social support play a role in mediating the relationship between ASD symptom severity and the affiliate stigma experienced by caregivers.

Our study found that caregivers of children with ASD reported experiencing affiliate stigma. However, the mean of affiliate stigma among caregivers of children with ASD in this study was lower than that of Chinese caregivers of children with ASD using the same Affiliate Stigma Scale (Zhou et al., 2018). The present study also demonstrated that high ASD symptom severity predicted a high affiliate stigma level among caregivers of children with ASD. This finding aligns with previous reports in China (Lyu et al., 2022) and India (Patra and Kumar Patro, 2019) showing a significant relationship between children’s ASD symptom severity and caregivers’ affiliate stigma. However, the findings differ from those of another study conducted in Saudi Arabia, which revealed no significant association between ASD symptom severity and caregiver-perceived affiliate stigma (Alshaigi et al., 2020). This discrepancy may be attributed to

### DISCUSSION

Figure 2: Structural equation model with unstandardized (standardized) path coefficients. *P < 0.05. Dashed lines represent nonsignificant effects in the model. Abbreviation: ASD, autism spectrum disorder.

Table 4: Effect estimates for the tested model.

<table>
<thead>
<tr>
<th>Structural paths</th>
<th>Unstandardized coefficient (B)</th>
<th>Standardized coefficient (β)</th>
<th>Standard error</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct paths</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASD symptom severity → Adaptive coping strategies</td>
<td>0.023</td>
<td>0.024</td>
<td>0.050</td>
<td>0.637</td>
</tr>
<tr>
<td>ASD symptom severity → Maladaptive coping strategies</td>
<td>0.256</td>
<td>0.358</td>
<td>0.044</td>
<td>0.000</td>
</tr>
<tr>
<td>ASD symptom severity → Perceived social support</td>
<td>−0.061</td>
<td>−0.362</td>
<td>0.049</td>
<td>0.000</td>
</tr>
<tr>
<td>ASD symptom severity → Affiliate stigma</td>
<td>0.838</td>
<td>0.386</td>
<td>0.049</td>
<td>0.000</td>
</tr>
<tr>
<td>Adaptive coping strategies → Affiliate stigma</td>
<td>−0.275</td>
<td>−0.173</td>
<td>0.044</td>
<td>0.000</td>
</tr>
<tr>
<td>Maladaptive coping strategies → Affiliate stigma</td>
<td>0.846</td>
<td>0.386</td>
<td>0.039</td>
<td>0.000</td>
</tr>
<tr>
<td>Perceived social support → Affiliate stigma</td>
<td>−2.587</td>
<td>−0.278</td>
<td>0.054</td>
<td>0.000</td>
</tr>
<tr>
<td>Indirect paths (ASD symptom severity → Affiliate stigma)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASD symptom severity → Adaptive coping strategies → Affiliate stigma</td>
<td>−0.006</td>
<td>−0.004</td>
<td>0.009</td>
<td>0.641</td>
</tr>
<tr>
<td>ASD symptom severity → Maladaptive coping strategies → Affiliate stigma</td>
<td>0.216</td>
<td>0.138</td>
<td>0.022</td>
<td>0.000</td>
</tr>
<tr>
<td>ASD symptom severity → Perceived social support → Affiliate stigma</td>
<td>0.158</td>
<td>0.101</td>
<td>0.024</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Abbreviation: ASD, autism spectrum disorder.
the different methods used to assess ASD symptom severity. The latter study (Alshaigi et al., 2020) relied on a single question to categorize ASD symptom severity as mild, moderate, or severe. Indeed, caregivers who lack control over the factors contributing to the behavioral problems in children with ASD, as well as those who experience courtesy stigma, are more likely to face affiliate stigma (Mak and Kwok, 2010). Additionally, ASD is physically invisible, making it difficult for others to understand why children with ASD sometimes behave inappropriately. Consequently, people may blame the parents for these behaviors and view them as a result of poor parenting, which can lead to affiliate stigma. Thus, reducing the stigma surrounding caregivers of children with ASD should be a priority for professionals. Interventions such as promoting positive media representations of ASD, creating ASD-friendly spaces, and implementing programs such as the “Stigma of Living as an Autism Carer” and the “Autism sim” simulation (Lodder et al., 2019; Turnock et al., 2022) can be effective in increasing public awareness, enhancing caregiver resilience, and contributing to a more supportive and inclusive society.

In this study, both adaptive and maladaptive coping strategies affected affiliate stigma. The caregivers who employed adaptive coping strategies reported lower levels of affiliate stigma, whereas those who used maladaptive coping strategies reported higher levels of affiliate stigma. These findings align with previous reports emphasizing the beneficial outcomes associated with adaptive coping strategies among caregivers of children with ASD (Vernhet et al., 2019). Conversely, the present findings indicate that maladaptive coping strategies have a stronger impact on affiliate stigma levels than adaptive coping strategies, suggesting that caregivers of children with ASD may be more inclined to cope by engaging in social withdrawal to avoid judgmental comments and stigma from others (Broady et al., 2017; Lyu et al., 2022). Interestingly, maladaptive coping strategies partially mediated the association between ASD symptom severity and affiliate stigma, while adaptive coping strategies did not. These findings suggest that as ASD symptom severity increases, caregivers may use maladaptive coping strategies, consequently leading to higher levels of affiliate stigma. However, notably, no prior research has explored whether adaptive or maladaptive coping strategies play a mediating role in the relationship between ASD symptom severity and affiliate stigma. Therefore, further investigation is required to gain a deeper understanding of the complex association between ASD symptom severity, coping strategies, and affiliate stigma. Overall, these findings show the impact of caregivers’ coping strategies on their experiences of affiliate stigma. To support caregivers in overcoming the stigma associated with caring for a child with ASD, professionals should provide them with effective coping strategies, such as mindfulness or cognitive behavioral therapy.

The present study also found that the caregivers of children with ASD who felt that they had strong social support had lower levels of affiliate stigma. This finding aligns with a previous study by Ma and Mak (2016) showing that caregivers of children with physical disabilities experienced reduced affiliate stigma when they perceived a higher level of social support. Conversely, the present findings are only partially consistent with those of a study conducted in China, in which only support from friends had a significant protective effect against affiliate stigma among the support types examined, including support from friends, family, and professionals (Mak and Kwok, 2010). These findings suggest that intangible support from family, friends, and significant others plays a vital role in fostering social connection and acceptance, ultimately leading to a reduction in caregivers’ experience of affiliate stigma. Similar findings have been observed among caregivers of children with physical disabilities, wherein perceived social support mediates the association between worry and affiliate stigma among caregivers (Ma and Mak, 2016). However, no previous research has specifically examined whether perceived social support mediates the link between ASD symptom severity and affiliate stigma. Further research is necessary to improve our understanding of this issue. It is also essential to develop interventions and support programs that encourage social support and reduce affiliate stigma among caregivers of children with ASD.

Limitations

Although this study yielded interesting findings, it is important to acknowledge its limitations. For instance, the participants were recruited through convenience sampling, which may have impacted the generalizability of the findings. Nevertheless, the data were collected from multiple cities and facilities to enhance generalizability. Moreover, the study relied on caregivers’ reports of ASD symptom severity, which may have been subject to reporting bias. Thus, it would be helpful to use multiple sources of information, such as children’s health records and observations. Additionally, this study used a cross-sectional design, which may have limited its ability to infer causation. As the study variables are dynamic and can change over time, it would be wise to replicate this study using a longitudinal research design for a better understanding of cause-and-effect relationships.

CONCLUSION

This study investigated the affiliate stigma levels among caregivers of children with ASD in Saudi Arabia, as well as the factors that mediate the association between ASD symptom severity and affiliate stigma. The analyses indicated that the caregivers experienced affiliate stigma, which were found to increase as ASD symptom severity increased. Maladaptive coping strategies and perceived social support mediated this relationship. These findings underscore the importance of addressing the psychosocial needs of caregivers, specifically by promoting adaptive coping strategies and enhancing social support. Further longitudinal research is needed to explore how coping strategies and perceived social support may influence the affiliate stigma experienced by caregivers of children with ASD.
REFERENCES


