Prevalence of Maternal Affective disorders in Chinese Mothers of Preschool Children with Autism Spectrum Disorders

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CME

Abstract

Objectives: To evaluate the prevalence of affective disorders and identify their associated factors among Chinese mothers of preschool children diagnosed with autism spectrum disorders.
Methods: This cross-sectional study was conducted at the Autism Spectrum Disorders Multidisciplinary Clinic of the United Christian Hospital from August 2012 to June 2013. All mothers of a consecutive series of preschool children diagnosed with autism spectrum disorders at their first visit to the clinic were recruited. Information regarding the child-related, maternal, and environmental factors was collected. Psychiatric diagnoses were made according to the Chinese-Bilingual Structured Clinical Interview for DSM-IV Axis I Disorders. Independent factors associated with maternal affective disorders were determined by univariate and multivariate analyses.
Results: Of the 121 subjects, the point prevalence of affective disorders as a group was 29.8%. The point prevalence of major depressive disorders, adjustment disorders, anxiety disorders, and bipolar affective disorders was 14.9%, 10.7%, 3.3% and 0.8%, respectively. A higher level of disruptive and self-absorbed behaviours in the children (as assessed by the Developmental Behaviour Checklist), a higher level of affiliate stigma (as assessed by 22-item Affiliate Stigma Scale), and a history of psychiatric disorders were independently associated with current affective disorders.
Conclusion: Psychiatric disorders, predominantly affective disorders, are common among Chinese mothers of preschool children with autism spectrum disorders. Identification of independent factors associated with maternal affective disorders can aid in the early detection of cases and planning of early intervention programmes to address both child and maternal psychological needs.

Key words: Autism spectrum disorder; Child, preschool; Mood disorders; Mothers

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Introduction

Autism spectrum disorders (ASD) are lifelong neurodevelopmental disabilities characterised by impairment in reciprocal social interactions and communication, as well as stereotypical behaviour. Mothers raising young children with ASD face unique caregiving challenges due to difficulties in the daily management of the child's behavioural and emotional symptoms, and the burden of coordinating various specialised services.[1] According to the international literature, parents of autistic children consistently report an increased level of parenting stress and a higher rate of affective symptoms. Compared with parents of typically developing children and those with other physical disabilities, a higher prevalence of psychiatric disorders, particularly depressive and anxiety disorders among parents of autistic individuals is consistently reported in the Caucasian population.[2,3] Nonetheless, local research in Chinese families is scarce.

The association between maternal depression and adverse child outcomes is well established in the literature. Children's exposure to chronic maternal depression is associated with more cognitive and emotional problems for children since depression interferes with a mother's ability to respond sensitively and consistently over time.[4,5] Inconsistent maternal emotional responsiveness resulting from maternal depression may affect the fostering of a secure attachment in the mother-child dyadic interaction. Moreover, maternal psychological distress has been shown to be associated with non-compliance with both clinic-based and parent-mediated early intervention programmes for autistic preschoolers.[6] Maternal depression has also

been shown to be associated with higher rates of child abuse and neglect.[7] Thus, providing early detection and timely treatment to depressed mothers is of paramount importance for improving the overall illness outcome for both the child and the mother.

In view of limited local research in this area and the clinical importance of maternal affective disorders, the current study aimed to evaluate the prevalence of affective disorders among mothers of preschool children diagnosed with ASD in Hong Kong and to identity their associated factors.

Methods

Study Design

This was a cross-sectional descriptive study conducted in the ASD multidisciplinary clinic at the United Christian Hospital (UCH) of the Hospital Authority in Hong Kong. This clinic acts as a tertiary psychiatric centre for the assessment and management of preschool children in the Kowloon East Cluster who present with autistic features. Study approval was obtained from the Research Ethics Committee of the Hospital Authority.

Study Population

All consecutive first-appointment patients at the ASD Multidisciplinary Clinic of UCH from August 2012 to June 2013 were screened. Patients diagnosed with ASD were identified and their mothers were invited to participate in this study. Diagnosis of ASD was made by a specialist psychiatrist according to the DSM-IV criteria. Subjects were excluded if they were non-Chinese, unable to comprehend Chinese language, or had significant cognitive impairment or communication difficulties.

Procedure

The authors attended the ASD Multidisciplinary Clinic over the study period. All patients and their mothers were approached by and screened for eligibility. All participants completed the following self-rated questionnaires, including: (1) Developmental Behaviour Checklist, Primary Carer Version (DBC-P); (2) Chinese Ways of Coping Questionnaire (CWCQ); and (3) 22-item Affiliate Stigma Scale. The authors then interviewed all subjects using the Chinese-Bilingual Structured Clinical Interview for DSM-IV Axis I Disorders (CB-SCID-I/P), and psychiatric diagnoses, if any, were ascertained.

Data Analysis

The Statistical Package for the Social Sciences, Windows version 19 (SPSS Inc., Chicago [IL], US) was used for data analysis.

Results

Sample Recruitment

A total of 130 subjects who presented with their children to the ASD Multidisciplinary Clinic during the recruitment period were eligible for the study. Nine refused to participate due to time constraints and privacy concerns. Eventually, 121 subjects were enrolled. The overall response rate was 93%. No statistically significant difference was found between the participants and non-participants with regard to age, occupation, or education level.

Maternal Profile and Clinical Characteristics

The mean (± standard deviation) age of the sample population was 36.62 ± 4.74 years. The majority (93.4%) were married; 60.3% had completed secondary education while 38% had completed tertiary education. More than two thirds were working mothers and 31.4% were housewives. Regarding housing, 20.7%, 24.8% and 54.5% of the participants lived in public housing units, rented flats and self-owned units, respectively.

In all, 21 (17.4%) subjects had a self-reported history of psychiatric illness (19 had depressive disorders, 1 anxiety disorder, and 1 bipolar disorder). None of the participants reported a history of suicide attempt. Seven (5.8%) participants had a family history of mental illness (excluding their child's autistic disorder). The majority (97.5%) were reported to be in good general health.

Child Profile and Clinical Characteristics

A total of 102 (84.3%) children were male; the median (interquartile range [IQR]) age was 44 (41-47) months and all children were born locally. The majority (75.2%) attended kindergarten grade one. Most (96%) of the children were attending mainstream kindergarten while still on the waitlist for government-based special school education (Box). Most (79.3%) of the subjects were attending preschool training programmes in the private sector or non-government organisations as arranged by their parents. Regarding the source of referrals, 96.7% were referred from the Child Assessment Centre, while others from private paediatricians or general practitioners. Regarding family size, 49.6% of subjects had one or more siblings living in the family, and 11 (9.1%) subjects had one or more siblings also suffering from ASD.

The median duration on the waitlist for child psychiatric services (i.e. time since diagnosis of ASD) was 11 months (IQR, 7-13 months), and the median developmental quotient was 83.33 (IQR, 71.71-93.73).

Prevalence of Maternal Affective Disorders

The point and lifetime prevalence of affective disorders in Chinese mothers of preschool children with ASD are shown in Table 1. The point prevalence for affective disorders as a group was 29.8%. Major depressive disorder was the most common psychiatric disorder (point prevalence 14.9%), followed by adjustment disorder (10.7%) and anxiety disorders (3.3%). One (0.8%) subject suffered from bipolar affective disorder with onset prior to her child's diagnosis of ASD. She was suffering from a depressive episode at the time of the assessment. Among the subjects with current

Box. Services provided to preschool children with developmental delay or autism in Hong Kong.

In Hong Kong, all preschool children who present with developmental delay or autistic features are referred to government preschool rehabilitation services. The rehabilitation services include ICCC (integrated child care centre), SCCC (special child care centre) and EETC (early education and training centre). These services are described as follows:

1. ICCC: provides training and care to mildly disabled pre-schoolers in an ordinary kindergarten-cum-child care centre with a view to facilitating their future integration into mainstream education as well as society.
2. SCCC: provides special training and care for moderately and severely disabled children to facilitate their growth and development, helping them prepare for primary education.
3. EETC: provides professional early intervention and training services once or twice a week for young children with developmental disorders, and assists parents in mastering relevant child care skills.

Table 1. Point and lifetime prevalence of Axis I psychiatric disorders in Chinese mothers of preschool children with autism spectrum disorders (n = 121).*

	Point prevalence	Lifetime prevalence
Any psychiatric disorder	36 (29.8)	48 (39.7)
Major depressive disorder	18 (14.9)	30 (24.8)
Single	12 (9.9)	24 (19.8)
Recurrent	6 (5.0)	6 (5.0)
Adjustment disorder	13 (10.7)	13 (10.7)
With depressed mood	10 (8.3)	10 (8.3)
With mixed anxiety and depressed mood	3 (2.5)	3 (2.5)
Anxiety disorder	4 (3.3)	4 (3.3)
Generalised anxiety disorder	2 (1.7)	2 (1.7)
Anxiety disorder, not otherwise specified	2 (1.7)	2 (1.7)
Bipolar affective disorder	1 (0.8)	1 (0.8)

* Data are shown as No. (%) of subjects.

psychiatric disorders, only 25% were receiving active psychiatric treatment.

Independent Factors Associated with Affective Disorders in Mothers of Autistic Children

Results of the univariate analysis are summarised in Tables 2 and 3. All the potential risk factors identified by univariate analysis (p < 0.1) were included in the regression model. The 5 subscale scores from the DBC-P, rather than the Total Behaviour Problem Score, were entered into the regression to evaluate which specific domains of behavioural problems were more associated with maternal psychiatric disorders. Among the 5 subscale scores from the DBC-P, a high correlation was noted between domains of "self-absorbed" and "social relating". In view of their high correlation and clinical similarity, only the subscale scores from "self-absorbed" domain were included in the regression model.

In the final regression model, there was no problem with multicollinearity. Outliers and influential observations were verified as insignificant. The p value of the Hosmer-

Lemeshow goodness-of-fit test was 0.623, indicating a good fit for the model.

The results of multivariate analysis are summarised in Table 4. The multivariate analysis revealed that a history of psychiatric disorder before the child's diagnosis of ASD, higher score on the Affiliate Stigma Scale, and higher score in disruptive / antisocial and self-absorbed behaviour (as assessed by the DBC-P) were independent variables associated with current affective disorders.

Discussion

Prevalence of Maternal Affective Disorders

In the current study, the point prevalence of affective disorders among Chinese mothers of preschool children with ASD was 29.8%, whereas the lifetime prevalence being 39.7%. These results were comparable to those published by Piven et al[2] who reported a lifetime prevalence of mood disorders of 39.3% (27% for major depressive disorder and 12.3% for anxiety disorders). Both studies

Table 2. Univariate analysis of maternal and environmental factors associated with current affective disorders.[*]

	No affective disorder (n = 85)	Presence of affective disorder (n = 36)	p Value[†]
Mean (± standard deviation) age (years)	37.15 ± 4.54	35.56 ± 5.02	0.06
Education level			0.14[a]
Primary or less	1 (1.2)	1 (2.8)	
Secondary	48 (56.5)	25 (69.4)	
Tertiary or above	36 (42.4)	10 (27.8)	
Employment			0.08[a]
Housewife	22 (25.9)	16 (44.4)	
Part-time work	5 (5.9)	0	
Full time work	58 (68.2)	20 (55.6)	
Marital status			0.01[a]
Married	83 (97.6)	30 (83.3)	
Not married	2 (2.4)	6 (16.7)	
Endorsing a religion			0.29
Yes	27 (31.8)	8 (22.2)	
No	58 (68.2)	28 (77.8)	
Family income (HK$)			0.03
< 10,000	4 (4.7)	4 (11.1)	
10,001-20,000	16 (18.8)	14 (38.9)	
20,001-30,000	21 (24.7)	5 (13.9)	
30,001-40,000	21 (24.7)	3 (8.3)	
> 40,000	23 (27.1)	10 (27.8)	
Presence of another child with psychiatric problems			0.3[a]
Yes	6 (7.1)	5 (13.9)	
No	79 (92.9)	31 (86.1)	
Presence of confidantes			0.003[a]
Yes	84 (98.8)	30 (83.3)	
No	1 (1.2)	6 (16.7)	
Contact time (hours/day)			0.21[a]
1-3	0	1 (2.8)	
3-5	60 (70.6)	22 (61.1)	
> 5	25 (29.4)	13 (36.1)	
Presence of medical illness			1[a]
Yes	2 (2.4)	1 (2.8)	
No	83 (97.6)	35 (97.2)	
Family history of mental illness			0.003[a]
Yes	1 (1.2)	6 (16.7)	
No	84 (98.8)	30 (83.3)	
Psychiatric history			0.003
Yes	9 (10.6)	12 (33.3)	
No	76 (89.4)	24 (66.7)	
Affiliate Stigma Scale score	44 (31.5-49.5)	55.5 (50-64)	< 0.001
CWCQ			
Rational problem solving	5 (4-7)	5 (4-6.75)	0.97
Resigned distancing	3 (2-5)	5.5 (4-7)	< 0.001
Seeking support	6 (4.5-7)	6 (5-7)	0.85
Passive wishful thinking	5 (4-6)	6 (3-7)	0.41

Abbreviation: *CWCQ = Chinese Ways of Coping Questionnaire*.

[*]   *Data are shown as No. (%) of subjects or median (interquartile range), unless otherwise specified.*

[†]   *Categorical data were analysed by Chi-square test or Fisher's exact test (marked with 'a' after p values). Others are continuous data analysed by independent-samples t test.*

Table 3. Univariate analysis of child factors associated with current affective disorder.

	No affective disorder (n = 85)	Presence of affective disorder (n = 36)	p Value[†]
Chronological age (months)	45 (41.5-47)	42.5 (37.25-47)	0.41
Chronological age at the time of referral (months)	33 (28-36)	30 (27-35.75)	0.21
Mental age at the time of referral (months)	25 (21-33)	24 (21.25-30)	0.36
Developmental quotient	83.33 (72.36-93.75)	82.76 (69.08-92.15)	0.81
Time from waitlist to child psychiatric service	11 (8-13)	9 (7-13.75)	0.24
Child gender			0.2
Male	74 (87.1)	28 (77.8)	
Female	11 (12.9)	8 (22.2)	
Grade			0.76
Nursery level 1	12 (14.1)	7 (19.4)	
KG level 1	65 (76.5)	26 (72.2)	
KG level 2	8 (9.4)	3 (8.3)	
Education			0.28[a]
ICCC	10 (11.8)	3 (8.3)	
EETC & mainstream KG concurrently	2 (2.4)	1 (2.8)	
SCCC	3 (3.5)	2 (5.6)	
Mainstream KG but not on waitlist to ICCC / EETC / SCCC	1 (1.2)	1 (2.8)	
Mainstream KG and on the waitlist to ICCC / EETC / SCCC	69 (81.2)	27 (75.0)	
Others (private / NGO)	0	2 (5.6)	
Presence of physical problems			0.54
Yes	17 (20.0)	9 (25.0)	
No	68 (80.0)	27 (75.0)	
Current non-government training service			0.83
Yes	67 (78.8)	29 (80.6)	
No	18 (21.2)	7 (19.4)	
DBC-P			
TBPS	33 (27.5-43)	74 (59.25-90.75)	< 0.001
Subscale			
Disruptive / antisocial	11 (6-14)	23 (16-27)	< 0.001
Self-absorbed	10 (7-13.5)	23 (18-29)	< 0.001
Communication disturbances	5 (4-7)	10 (7.25-12.75)	< 0.001
Anxiety	4 (3-6)	8.5 (5-11)	< 0.001
Social relating	4 (2-5)	8 (5.25-11)	< 0.001

Abbreviations: *DBC-P = Developmental Behaviour Checklist, Primary Carer Version; EETC = early education and training centre; ICCC = integrated child care centre; KG = kindergarten; NGO = non-government organisation; SCCC = special child care centre; TBPS = Total Behaviour Problem Score.*

[*]   *Data are shown as median (interquartile range) or No. (%) of subjects, unless otherwise specified.*

[†]   *Categorical data were analysed by Chi-square test or Fisher's exact test (marked with 'a' after p values). Others are continuous data analysed by independent-samples t test.*

assessed psychiatric outcome using a structured psychiatric interview.

The point prevalence of affective disorder in the current study was 29.8% and was lower than that reported by Taylor and Warren.[3] This is possibly due to the use of the SCID as a more stringent criterion in this study, or to differences in population characteristics due to sampling variations.

The most common psychiatric disorder among subjects in this study was major depressive disorder (14.9%), followed by adjustment disorders (10.7%) and anxiety disorders (3.3%). The results were largely compatible with the findings from the majority of previous studies.[3,8,9]

Table 4. Multivariate analysis of factors associated with current affective disorder.

Risk factor	Unadjusted odds ratio (95% confidence interval)	Age-adjusted odds ratio (95% confidence interval)	p Value
Psychiatric history	5.579 (0.99-31.426)	5.585 (0.987-31.609)	0.034
DBC-P (disruptive / antisocial)	1.122 (1.01-1.247)	1.122 (1.01-1.247)	0.031
DBC-P (self-absorbed)	1.163 (1.04-1.301)	1.163 (1.037-1.304)	0.008
Stigma	1.163 (1.059-1.277)	1.163 (1.058-1.279)	0.002

Abbreviation: *DBC-P = Developmental Behaviour Checklist, Primary Carer Version.*

Independent Factors Associated with Current Maternal Affective Disorder

Extent of Child Behavioural Problems

The extent of child behavioural problems was measured using the DBC-P in this study. An elevated score in the disruptive / antisocial and self-absorbed domains was independently associated with current affective disorders in mothers. This finding is consistent with other studies that have demonstrated a relationship between the behaviour of children with ASD and maternal depressive features.[10,11]

The relationship between child behavioural problems and maternal psychological distress has been postulated to be bidirectional in nature.[12] Children with ASD often place increased demands on their mother due to the nature of their disorder and the behaviours they exhibit. Children with ASD tend to display inappropriate social behaviour, act aggressively towards themselves or others, engage in repetitive or ritualistic actions, and show marked impairment in language, communication, eye contact and affection. These behavioural problems are often chronic in nature and not easily corrected. An increase in the severity of child problem behaviour is associated with reduced psychological empowerment and acceptance in their mother, and may result in increased maternal depressive symptomatology.[11] In turn, mothers with more depressive features are more avoidant in their parenting style and display less of an emotional response in the mother-child interaction that can further escalate frustration in the child and behaviour problems.[13]

In the current study, the specific behavioural problems of children in the disruptive / antisocial and self-absorbed domains were most strongly associated with maternal affective disorders. Disruptive behaviours in children were, in general, perceived as non-compliant and poor conduct by mothers. Mothers often felt exhausted by managing their children's disruptive behaviour and were highly distressed about the injuries caused by their children's aggression. For autistic children with predominantly self-absorbed problems, mothers often found them difficult to engage. Their lack of affectionate response could be emotionally painful for their mother and lead to the development of increased psychological distress.[14]

Stigma

An elevated score on the Affiliate Stigma Scale was independently associated with current affective disorders in the present study. Children with ASD often have language difficulties, and may exhibit socially inappropriate behaviour in the form of withdrawal, aggression, and self-stimulation. Mothers of children with ASD often experience considerable stigmatisation due to their children's behavioural oddities, despite their normal physical appearance. Mothers often internalise society's negative views towards their autistic children, and develop negative self-evaluation and emotions. They often feel ashamed, worthless, and inferior. Behaviourally, they often withdraw and conceal their stigmatised status by reducing participation in social activities that further jeopardises their social support and puts them at risk of depression.[15,16]

Studies suggest an increase in medical knowledge of ASD could reduce stigmatisation.[17] By understanding the biogenic aetiology of ASD and the medical construct of "spectrum disorder", mothers can negotiate an identity for themselves and their children that, though not "normal", is valuable and not necessarily inferior. Mothers are then better able to assert the uniqueness and individuality of their children.

History of Psychiatric Illness

A history of psychiatric illness was independently associated with current affective disorders in the present study. The literature on families of autistic individuals supports the view that the risk of developing psychiatric illness is higher in individuals with a psychiatric history. One study reported that 77% of parents of autistic individuals who suffered from major depression and 63% of parents with an anxiety disorder had at least an episode that occurred before the birth of their autistic child.[2] The diagnosis of ASD and its long-term implications, the extra childcare demands due to child behavioural problems and low adaptive functioning, the increased financial burden and potential increase in spousal conflicts regarding parenting approach are all highly stressful events. Faced with these stressors, it is not surprising that mothers with a history of depression develop another episode of affective illness.

Clinical Implications

The present study revealed a high level of unmet need for psychiatric treatment in Chinese mothers of preschool children with ASD. Approximately 75% of the subjects with current affective disorders had not received appropriate psychiatric treatment. Given the detrimental effect of psychiatric morbidity on maternal quality of life and mother-child interaction, prompt identification and treatment of these disorders are necessary.

At the assessment stage, a multidisciplinary approach to the early assessment of children with ASD should also include an assessment of their mother's psychosocial profile. Mothers who have a history of psychiatric illness and poor coping strategies may be particularly vulnerable and should receive special attention to prevent affective illness. Early intervention programmes should not just focus on child training; rather, a holistic family-based early intervention programme is needed to address the needs of both the child and mother.

In the intervention programme, strategies to address child behavioural problems, enhance mother-child interaction, and address the mother's emotional needs should be included.

Traditionally, training programmes for autistic children have focused more on skills learning and behaviour training, e.g. ABA (Applied Behaviour Analysis) and TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children).[18] It is worthnoting that in the current study, apart from disruptive behaviour, self-absorbed behaviour was also associated with maternal affective disorders. A higher level of mother-child synchronisation and attunement, a form of shared positive affect, was reported to have led to superior joint attention and language development in children with autistic disorders.[19] Nonetheless, depressed mothers often have difficulty in engaging their children. Maternal depression leads to reduced maternal responsiveness and subsequent increased child frustration and negative mother-child interaction.[13] Thus, programmes that target this aspect could benefit the overall development of the child. Relationship and play-based intervention strategies, such as the DIR (Developmental, Individual-differences, and Relationship-based approach) and PCIT (parent-child interaction therapy), which focus more on engagement and interaction, could be an important approach for autistic children with depressed mothers.[20,21]

With regard to maternal needs, a psycho-education programme may improve maternal knowledge of ASD and improve acceptance of their child's problems, and encourage better help-seeking behaviour for mental health concerns. Psychotherapeutic interventions using both cognitive approaches and mindfulness approaches have been shown to improve the maternal sense of empowerment, competence and psychological acceptance that, in turn, improves psychiatric outcomes.[11]

Finally, from the public health perspective, health talks on ASD would be useful to increase public awareness and knowledge of ASD, thus reducing overall stigmatisation of affected families, and thereby improving their psychiatric outcomes.[22]

Limitations and Future Research Directions

The study findings should be considered in the context of certain limitations. Firstly, the cross-sectional design of the study did not allow for investigation of a causal relationship between the independent associated factors and affective disorders. Prospective follow-up studies could better delineate a temporal relationship between these factors and establish causation.

Second, all the subjects in this study were recruited from a tertiary psychiatric centre. Preschool children whose parents refused referral to the child psychiatric clinic, or those whose parents opted for service in the private sector were not included in this study. Therefore the current sample may not be representative of the community as a whole and thus limits the generalisability of the findings. Recruitment from the primary care setting such as the Child Assessment Centre could be considered in the future to reduce the sampling bias. Nevertheless, the current sample represents the naturalistic clinical sample encountered by child psychiatrists in our daily practice and therefore is useful and applicable from the perspective of child psychiatry.

Third, the psychiatric diagnosis of ASD was not verified by a standardised assessment tool such as the Autism Diagnostic Interview–Revised (ADI-R) or Autism Diagnostic Observation Schedule (ADOS). This could have led to reporting bias of the psychiatric diagnosis. This limitation is minimised by achieving a diagnosis of ASD by a specialist psychiatrist, with additional information collected from the comprehensive assessment performed by a multidisciplinary expert panel that included a clinical psychologist, occupational therapist, speech therapist, and psychiatric nurse. Inclusion of ADI-R or ADOS in the diagnostic process in future studies could further improve the diagnostic reliability and reduce such reporting bias.

In view of the above limitations, longer-term prospective studies should be conducted to establish a causal relationship between various risk factors and psychiatric outcomes. A prospective study design would also allow us to evaluate the effectiveness of early intervention programmes in improving children's functioning and maternal psychiatric outcomes.

Qualitative research components could help clarify the potential causative mechanism and psychological process that underlie psychiatric morbidity in this group of mothers. Multicentre research with a larger sample size should be encouraged so as to increase the power of the study.

Finally, the current study focused on psychiatric outcome of mothers caring for children with ASD in the preschool age range and thus limits its generalisability. Recruitment of families of children with ASD with a broader age range would allow for a better understanding of this condition. It is also worthwhile to further investigate the

psychiatric outcomes of other family members, including fathers and siblings, as the psychological impact of having a child with ASD affects the family as a whole and is known to be associated with increased family strain.[23]

Conclusion

Affective disorders were prevalent among Chinese mothers of children with ASD in a regional hospital in Hong Kong. Nonetheless, only a small proportion of the affected individuals received appropriate mental health care. The significant under-recognition of this phenomenon and unmet treatment need among these mothers should be addressed. Psychiatric interventions with a multidisciplinary approach should be delivered in a timely manner. A better understanding of maternal mental health will hopefully contribute to better planning of early intervention programmes and, in turn, improve the long-term outcome for both mothers and their autistic children.

Declaration

The authors declared no conflicts of interest in this study.

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