

ORIGINAL ARTICLE

PREVALENCE OF DEPRESSIVE DISORDERS AMONG CAREGIVERS OF CHILDREN WITH AUTISM IN THAILAND

*Chawanun Charnsil**, *Narumol Bathia***

***Department of Psychiatry, Faculty of Medicine, Chiang Mai University,
Chiang Mai, Thailand 50300, **Address: Department of Psychiatry,
Utaradit Hospital, Amphur Muang Utaradit, Thailand.**

Abstract

Objective: Raising children with autism is a stressful event for a family because of the interrelated negative effects. Studies on clinical depression among caregivers of children with autism are very few. The two main objectives were (i) to find the prevalence of Major Depressive Disorder and Dysthymic Disorder in caregivers of children with autism, and (ii) to determine the factors associated with these disorders. **Method:** A total of 27 caregivers were interviewed by using the Mini International Neuropsychiatric Interview Thai version to find clinical depression in caregivers. **Results:** Almost 26 % of the participants demonstrated depressive disorders, of which 14.8% and 11.1% met diagnostic criteria for Major Depressive Disorder and Dysthymic Disorder respectively. Low education level was a significant factor associated with depression. **Conclusion:** The prevalence of clinical depression is higher among caregivers of children with autism than in the general population. Hence, psychiatrists should include the assessment for caregivers' depression in their care plans for autistic children to enhance the development of the children and their caregivers. *ASEAN Journal of Psychiatry, Vol.11(1): Jan – June 2010: XX XX.*

Keywords: Depressive Disorders, Autistic Caregivers in Thailand

Introduction

Leo Kanner described autistic disorder approximately 60 years ago but its cause remains unknown [1]. The *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision (DSM-IV-TR)* categorized Autistic Disorder under Pervasive Developmental Disorder (PDD). The essential features of autism are divided into three major categories: (1) qualitative impairment in social interactions, (2) difficulties in communication, and (3) restricted repetitive and stereotyped patterns of behaviors and/or interests [2].

Epidemiological studies examining the prevalence of autism have shown mixed results. Fombonne [3] found that the prevalence of autism increased from 4 in 10,000 cases in the 1960s and 1970s to 13 in 10,000 cases in 2005. Sirwanarangsun, P. [4] found the prevalence of autism to be 9.9 per 10,000 children in Thailand. Surinkaew, Louthrenoo, Charnsil and Witoonchart [5] estimated the prevalence of pervasive developmental disorder in Thailand at 3.2 per 1,000 children.

Health care professionals are concerned about the increase in the prevalence of autistic disorder. Research findings have demonstrated that families of children with autistic disorder experience emotional difficulties, which could perpetuate downward spiral effects on the family members' psychological well-being and the children's development. Evidence suggests that families of children with developmental disorders experience higher level of stress [6], depression [7], greater economic burden [8] and lower rates of employment and social participation [9]. Bitsika and Sharpley [10] found that nearly two thirds of parents of children with autism were clinically depressed.

This decrease in the family's well-being jeopardizes the children's development. Osborne, McHugh, Saunders, and Reed [11] discovered that early intensive intervention with autistic children is ineffective when parents of children experienced high levels of stress. This negative outcome prevents children from benefitting from the intensive intervention which is intended to advance their development.

Baker, McIntyre, Crnic, Edelbrock and Low [6] found that after accounting for the baseline stress level of the parents, the child's behavioral problems predicted an escalation of parental stress. The emergence of the child's behavioral problems was exacerbated by the stress of the parent. These findings suggest that autistic disorder generates interrelated multi-dimensional problems for the family and the child with the autistic disorder.

Research studies have illustrated that parents of children with developmental disorder experienced high levels of depression and stress but these studies failed to differentiate between clinical depression and symptoms of depression. Bailey, Golden, Robert &

Ford [12] reviewed 42 research articles and discovered that only eight of the studies investigated clinical depression in participants.

Clinical depression is described as "symptoms that are so pervasive and debilitating that they impair the ability to enjoy life or function as the individual normally would" [12]. Distinguishing between symptom of depression and clinical depression is crucial because it allows mental health professionals to effectively determine an appropriate course of treatment for the parents and the children.

Numerous research studies have identified a number of risk factors associated with depression in caregivers of children with developmental disorders [13 - 16]. These factors include gender [13, 15, 17], age [18], amount of time spent caring for the children [19], marital status [22, 23], parental education [24] and behavior problems of autistic disorder [6, 7, 13, 17, 20, 21].

Meanwhile, social support is considered a protective factor against psychological difficulties. Feldman, McDonald, Serbin, Stack, Secco and Yu [25] found that participants who scored above the Beck Depression Inventory's (BDI) cut off point received less social support than participants without depressive symptoms. Benson [26] discovered that informal support reduced levels of parental stress and depression.

This paper has two primary aims. The first is to investigate the prevalence of clinical depression among primary caregivers of children with autism. We hypothesize that the prevalence of clinical depression in the caregivers will be higher than in the general population. The second is to examine risk factors associated with clinical depression among caregivers such as gender, age,

education level, marital status, amount of time spent in caring tasks, social support, and severity of autistic disorder.

Method

This is a clinical study with a cross-sectional design. We recruited participants from the Outpatient Clinic of the Child Psychiatric unit, Maharaj Hospital, Chiang Mai, Thailand. The Ethics Committee of the Faculty of Medicine, Chiang Mai University, Thailand, approved this study.

Participants

Caregivers of children diagnosed with autistic disorder were invited to participate in the study. Diagnosed was made using DSM VI-TR criteria. The caregivers were included in the study if (1) they were above 18 years old, and (2) they were able to communicate in Thai language fluently. If the child had more than one primary caregiver, both parents were invited to participate. Participants with history of psychiatric disorders prior to nurturing the children were excluded from this study.

Materials

Demographic data was collected using the interview form we designed. The Mini International Neuropsychiatric Interview (MINI) Thai Version 5.0.0 models A and B were used to diagnose Major Depressive Disorder and Dysthymic Disorder. The MINI has the advantages of being concise, and focused mainly on current diagnoses [27 - 29]. Studies have shown that the MINI has significantly high reliability and validity scores [28, 29]. Kittirattanapaiboon, & Khamwongpin [30] had tested the validity and reliability of the Thai version of MINI and found a significant Kappa, sensitivity, and positive predictive value of the Thai version of MINI.

Severity of the autistic disorder was measured by the Childhood Autism Rating Scale (CARs). CARs is a diagnostic assessment method that rates children on a scale from one to four for various criteria, ranging from normal to severe, and yields a composite score ranging from non-autistic to mildly autistic, moderately autistic, or severely autistic. The scale is used to observe and subjectively rate fifteen items. Total CARs scores range from a fifteen to 60, we can use the score to severity grading as 15-30 - non-autistic, 30-37 - mildly-moderately autistic and 37-60 - severely autistic.

Although CARs was developed before the publication of the *DSM IV*, studies have demonstrated that CARs is nevertheless an effective screening device for autism [31, 32].

Procedure

The caregivers of children with autistic disorder according to the *DSM-IV-TR* were invited to participate in this research. Demographic data was collected using questionnaires interview form designed by the researchers. A trained psychiatric resident at Maharaj Hospital used the Thai version of MINI models A and B to diagnose depressive disorder in the participants. The CARs was used to evaluate the severity of autistic symptoms of the children. The caregivers with clinical depression were referred to the psychiatrist first for further assessment and treatment.

Data Analysis

We used descriptive data analysis to interpret the results. The student t-test was used to evaluate continuous variables. The nominal risk factors were calculated by using Fisher's Exact Test.

Results

A total number of 27 participants (N=27) who met the inclusion criteria were enrolled. Table 1 shows the demographic data of the participants. There were 12 (44.40%) male and 15 (55.60%) female participants with a

mean age of 46.70 years. The majority of the participants was married and had an average of 11.37 years of education. Twenty-four participants in this study were parents with autistic children and three others were relatives of autistic children.

Table 1 Demographic Data of the participants

Variables	%(n)	M	SD
Gender			
Male	44.40 (12)		
Female	55.60 (15)		
Age		46.70	8.50
Education (in years)		11.34	5.04
Marital Status			
Single	3.70 (1)		
Married	81.50 (22)		
Widowed	3.70 (1)		
Divorced	11.10 (3)		
Number of Children		1.63	0.69
Occupation			
Farmer	7.40 (2)		
Corporate Employee	11.10 (3)		
Business Owner	18.50 (5)		
Government Officer	22.20 (6)		
Unemployed	18.50 (5)		
Other	22.20 (6)		
Income		468.82	299.65
Amount of time with children with autism (hour per day)		11.89	4.13
Social support			
Available	70.40 (19)		
Unavailable	29.60 (8)		
CARs		35.65	5.41

(M = Mean, SD = Standard deviation; CARs = Childhood Autism Rating Scale).

Note. N = 27. Year of education was measured from Grade 1 up to the highest education participants received. The amount of time spent to care for the child was measured in hour/day ratio. Income was measured in Thai Baht; the exchange value was 36.34 Baht per \$1 on March 6, 2009.

The prevalence of depressive disorders in this sample was 25.6%. The results showed that 7 of the 27 participants were clinically depressed. Of these 7 participants with clinical depression, 4 (14.8%) and 3 (11.1%) participants were diagnosed with Major Depressive Disorder and Dysthymic Disorder respectively. Psychiatrist used DSM-IV-TR to confirm the diagnosis for all

7 participants and also offered appropriate treatment.

Analysis of the risk factors associated with depression in caregivers was evaluated. The results showed that the number of years of education was the only factor that significantly predicted depression among caregivers. Table 2 shows the risk factors associated with depression in caregivers

Table 2: Risk factors associated with depression

Risk Factors	Depressive group			Non-depressive group			<i>p</i>
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	
Gender Male Female	2 5			10 10			0.41
Age		48.00	8.31		46.25	8.74	0.65
Education (years)		7.86	4.74		12.60	4.64	0.03*
Marital status Single Married Widowed Divorce	0 6 0 1			1 16 1 2			1.00
Amount of time in child care		11.43	5.29		12.05	3.79	0.74
Social Support Available Unavailable	4 3			15 5			0.63
CARs		38.93	4.62		34.5	5.29	

(Note. N = 27. Year of education was measured from Grade 1 up to the highest education participants received. The amount of time spent to care for the child was measured in hour/day ratio; $p < 0.05$)

Discussion

Our findings confirmed our first hypothesis about the prevalence of depressive disorders among caregivers of autistic children. The result does not only confirm the results of Baker et al[6] that caring for children with autism causes stress to caregivers, but it also shows that it is not only an emotional reaction but it is a disorder. That means that it needs treatment. The overall prevalence rate of depressive disorders in our sample is 25.6%, which is higher than the general population. In Thailand, the prevalence rates of MDD and Dysthymic Disorder are 3.2% and 1.2% respectively [4]. In the Asia Pacific region, rates of lifetime MDD range from 1.1% to 19.9% with a median of 3.7% [33]. In our sample, 14.8% and 11.1% of participants met the diagnostic criteria for MDD and Dysthymic Disorder respectively.

Thailand has limited its research on autism and its effects on individuals and society. This research provides additional understanding about autism and its impact on caregivers in Thailand. Osborne, McHugh, Saunders, and Reed [11] found that greater psychological problems in the caregivers lead to a greater negative impact on the child's development. Our findings suggest that caregivers of children with autism may have higher prevalence of clinical depression. This interrelation is important and should be addressed in our management plans for autistic children and their caregivers.

We examined seven risk factors associated with depression in caregivers of children with autistic disorder. The only factor significantly associated with depression is the education level of the caregivers. Caregivers who were clinically depressed had lesser years of education than those who were not clinically depressed. Participants with depression had an average of eight

years of education, whereas those who were not depressed averaged about 13 years of education.

Low levels of education were found to be associated with depression that might reflect the participant's capability to cope with the chronic stress enduring situations. Additionally, low education might jeopardize the caregivers' ability to search for available resources and support systems leading to greater risks for depression among the caregivers. This finding correspond to Ladin K's finding [34]. The education level varies among the Thais; with the majority still having a minimal education level [35]. Since education level is the risk factor for depression among caregivers, mental health professionals should be attentive to screen and monitor caregivers with low education in order to provide necessary interventions and treatments. The other factor that is almost significantly associated with depression is severity of autistic symptoms. Children of depressed caregivers have CARs higher than children of non depressed caregiver. But maybe the sample size is too small to have a significant difference.

The reason that other factors were not significantly correlated with the dependent variable in this study might be due to the cultural factors within Thai people. The nature of Thai society is a collective and supportive culture. Most Thais usually stay together as an extended family. Even if they live together as a nuclear family, there will usually be close relatives such as sisters, brothers or parents living nearby them. This characteristic may influence our results; perhaps the support that family receives from other family members, relatives, friends, community and society have a greater protective power to compensate for other limitations experienced by the family.

There are some limitations to this study. First, the small sample size of our study might affect the accuracy of the prevalence rate and significant factors associated with depression in caregivers. Furthermore, the sample of our study does not represent national data on depression among caregivers because our sample is regionally based. Future research should aim to include a larger population randomly selected from a national sample to determine with more confidence the incidence of depression among caregivers of children with autism. There are other factors that should determine the factors associated with depressive disorders such as the number of other children who are dependent on their caregiver, the age group of children with autism and other comorbid conditions in children with autism.

Acknowledgement

This research was funded by the Autistic Foundation, Faculty of Medicine Chiangmai University

References

1. Wolff S The history of autism. *Eur Child Adolesc Psychiatry*. 2004 Aug;13(4):2018.
2. American Psychiatric Association. *Diagnostic and statistical manual of mental disorder* (Revised 4th ed.). Washington, DC: American Psychiatric Press.
3. Fombonne, E. . Epidemiology of autistic disorder and other pervasive developmental disorders. *The Journal Of Clinical Psychiatry*, 66 (Suppl. 10), 3-8.
4. Sirwanarangsun, P.. Prevalence of mental disorders in Thailand: A National Survey 2003. *Journal of Mental Health of Thailand*, 12, 178.
5. Surinkaew, D., Louthrenoo, O., Charnsil, C., & Witoonchart, C., Prevalence of Pervasive Developmental Disorder in Preschool Children in Chiang Mai. *Chiang Mai Med Bull*, 44(1),29-34
6. Baker, B. L., McIntyre L. L., Blacher. J., Crnic, K., Edelbrock, C., & Low, C. Pre-school children with and without developmental delay: Behavior problems and parenting stress over time. *Journal of Intellectual Disability Research*, 47(4-5), 217-230.
7. Benson, P. R. The impact of child symptoms severity on depressed mood among parents of children with ASD: The mediating role of stress proliferation. *Journal of Autism and Developmental Disorder*, 36, 685-695.
8. Emerson, E. Mothers of children and adolescents with intellectual disability: Social and economic situation, mental health status, and the self-assessed social and psychological impact of the child's difficulties. *Journal of Intellectual Disability Research*, 47(4), 385-399
9. Seltzer M. M., Greenberg, J. S., Floyd, F. J., Pettee, Y., & Hong, J. Life course impacts of parenting a child with a disability. *American Journal Of Mental Retardation: AJMR*, 106(3), 265-286.
10. Bitsika, V. & Sharpley, C. F. Stress, Anxiety and Depression Among Parents of Children with Autism Spectrum Disorder. *Australian Journal of Guidance & Counseling*, 14(2), 151-161.

11. Osborne, L., McHugh, L., Saunders, J., & Reed, P. Parenting stress reduces the effectiveness of Early Teaching Interventions for Autistic Spectrum Disorders. *Journal of Autism & Developmental Disorders*, 38(6), 1092-1103.
12. Bailey, Golden, Roberts & Ford Maternal depression and developmental disability: research critique. *Ment Retard Dev Disabil Res Rev*. 2007;13(4):321-9.
13. Hastings, R., Kovshoff, H., Ward, N., degli Espinosa, F., Brown, T., & Remington, B. (2005, October 1). Systems Analysis of Stress and Positive Perceptions in Mothers and Fathers of Pre-School Children with Autism. *Journal of Autism and Developmental Disorders*, 35(5), 635-644.
14. Nikmat, A. W., Ahmad, M., Oom, N. L., Razali, S. Stress and psychological wellbeing among parents of children with Autism Spectrum Disorder. *ASEAN Journal of Psychiatry*, 2, 65-72.
15. Olsson, M., & Hwang, C. Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research*, 45(6), 535-543.
16. Saloviita, T., Itälinna, M., & Leinonen, E. Explaining the parental stress of fathers and mothers caring for a child with intellectual disability: a Double ABCX Model. *Journal of Intellectual Disability Research*, 47(4/5), 300-312.
17. Freeman, N., Perry, A., & Factor, D. Child Behaviours as Stressors: Replicating and Extending the Use of the CARS as a Measure of Stress: A Research Note. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 32(6), 1025-1030.
18. Minnes, P., Woodford, L., Passey, J. Mediators of Well-being in Aging Family Carers of Adults with Intellectual Disabilities. *Journal of Applied Research in Intellectual Disabilities*, 2, 539-552.
19. Plant, K., & Sanders, M. Predictors of care-giver stress in families of preschool-aged children with developmental disabilities. *Journal of Intellectual Disability Research*, 51(2), 109-124.
20. Johnston, C., Hessel, D., Blasey C., Eliez S., Erba H., Dyer-Friedman J., et al. Factors associated with parenting stress in mothers of children with fragile X syndrome. *Journal Of Developmental And Behavioral Pediatrics: JDBP*, 24(4), 267-275.
21. Wheeler, A., Hatton, D., Reichardt, A., & Bailey, D. Correlates of maternal behaviours in mothers of children with fragile X syndrome. *Journal of Intellectual Disability Research*, 51(6), 447-462.
22. Eisenhower, A., & Blacher, J. Mothers of young adults with intellectual disability: Multiple roles, ethnicity and well-being. *Journal of Intellectual Disability Research*, 50(12), 905-916.
23. Kersh, Hedvat, Hauser-Cram & Warfield The contribution of marital quality to the well-being of parents of children with developmental disabilities. *J Intellect Disabil Res*. 2006 Dec;50(Pt 12):883-93.
24. Ricci, L., & Hodapp, R. Fathers of children with Down's syndrome versus other types of intellectual disability: perceptions, stress and involvement. *Journal of Intellectual Disability Research*, 47(4/5), 273-284.

25. Feldman, M., McDonald, L., Serbin, L., Stack, D., Secco, M., & Yu, C. Predictors of depressive symptoms in primary caregivers of young children with or at risk for developmental delay. *Journal of Intellectual Disability Research*, 51(8), 606-619.
26. Benson PR. The impact of child symptom severity on depressed mood among parents of children with ASD: the mediating role of stress proliferation. *J Autism Dev Disord*. 2006 Jul;36(5):685-95.
27. Lecrubier, Y., Sheehan, D., Weiller, E., Amorim, P., Bonora, I., Sheehan, K., et al. The Mini International Neuropsychiatric Interview (MINI): A short diagnostic structured interview: Reliability and validity according to the CIDI. *European Psychiatry*, 12(5), 224-231.
28. Pinninti, N., Madison, H., Musser, E., & Rissmiller, D. MINI International Neuropsychiatric Schedule: clinical utility and patient acceptance. *European Psychiatry*, 18(7), 361.
29. Sheehan, D., Lecrubier, Y., Sheehan, K., Janavs, J., Weiller, E., Keskiner, A., et al. The validity of the Mini International Neuropsychiatric Interview (MINI) according to the SCID-P and its reliability. *European Psychiatry*, 12(5), 232-241.
30. Kittirattanapaiboon, P. & Khamwongpin M. The validity of the Mini International Neuropsychiatric Interview (M.I.N.I) – Thai Version. *Journal of Mental Health of Thailand*, 13, 125-135.
31. Magyar, C., & Pandolfi, V. Factor Structure Evaluation of the Childhood Autism Rating Scale. *Journal of Autism and Developmental Disorders*, 37(9), 1787-1794.
32. Saemundsen, E., Magnusson, P., Smari, J., & Sigurdardottiri, S. Autism Diagnostic Interview-Revised and the Childhood Autism Rating Scale: Convergence and Discrepancy in Diagnosing Autism. *Journal of Autism & Developmental Disorders*, 33(3), 319.
33. Chiu E. Epidemiology of depression in the Asia Pacific region. *Australas Psychiatry*. 2004;12 Suppl:S4-10.
34. Ladin K. Risk of late-life depression across 10 European Union countries: deconstructing the education effect. *J Aging Health*. 2008 Sep;20(6):653-70. Epub 2008 Jul 17.
35. Office of the educational council of Thailand. opportunity in education of Thai people. report 2007.

Corresponding author: *Chawanun Charmsil, M.D., Associate Professor, Department of Psychiatry, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand 50300.*

E-mail: charmsil.research@yahoo.com

Telephone: 66-53-945422

Fax: 66-53-894123,

Received: 19 January 2010

Accepted: 20 Mac 2010