PSYCHIATRIC MORBIDITY AMONG CHILDREN AND ADOLESCENTS LIVING IN ORPHANAGES AROUND KOTA BHARU, KELANTAN

BY

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I HEREBY CERTIFIED THAT TO THE BEST OF MY KNOWLEDGE,

THIS STUDY IS ENTIRELY THE WORK OF THE CANDIDATE,

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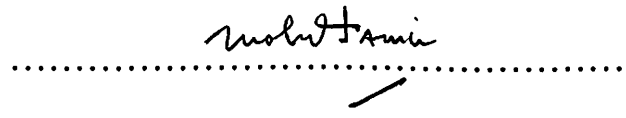

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ABBREVIATIONS

ICD 10	: Tenth Revision of the International Classification of Diseases
SDQ	: Strengths and Difficulties Questionnaire
SPSS	: Statistical Package for Social Science

ABSTRACT

PSYCHIATRIC MORBIDITY AMONG CHILDREN AND ADOLESCENTS LIVING IN ORPHANAGES AROUND KOTA BHARU, KELANTAN

Background: Child psychiatric morbidity are common and treatable, but often go undetected and therefore remain untreated. Children living in orphanage are more likely to have problems.

Objective: To characterize the psychiatric morbidity and associated factors among children and adolescents at risk living in orphanages around Kota Bharu.

Method: This study involving two-stage study design. First, screening of all the children and adolescents living in orphanages were done using the Malay version of Strengths and Difficulties Questionnaire. Both of self-rating and teacher-rating were used in this study. In the second stage, all the children and adolescents who were identified as high-risk group (extreme 10 % of population) and selected cases from the low risk group (90% of population) were interviewed for diagnoses using ICD 10.

Results: Based on the SDQ scoring in the screening phase, for the self-rating data, 27 (12%) of children and adolescents scored in the high risk group and 193 (88%) scored in the low risk group, Teacher rating data of SDQ reported that 25 (11%) children and

adolescents scored in the high risk group and 195 (88%) scored in the low risk group. In the second stage, for the self rating data 24 (10.9%) of respondents had a psychiatric diagnosis and for the teacher rating data, 18 (8.2%) had a psychiatric diagnosis.

Conclusions: Psychiatric morbidity were relatively frequent among children and adolescents living in orphanage. This results indicate that increased focus on prevention and early recognition of children and adolescents in need of treatment seems crucial. The screening programmes was found to be useful for the detection of child psychiatric morbidity, thereby improving access to effective treatment.

ABSTRAK

MORBIDITI PSIKIATRIK DI KALANGAN KANAK-KANAK DAN REMAJA YANG TINGGAL DI RUMAH ANAK-ANAK YATIM DI KOTA BHARU KELANTAN

Latar Belakang: Morbiditi psikiatrik di kalangan kanak-kanak dan remaja adalah biasa terjadi dan boleh dirawat, tetapi biasanya tidak dapat dikesan dan dibiarkan tanpa mendapat rawatan. Kanak-kanak dan remaja yang tingal di rumah anak-anak yatim lebih berkemungkinan mempunyai masalah ini.

Objektif : Kajian ini bertujuan untuk menentukan ciri morbiditi psikiatrik dan faktor yang berkaitan di kalangan kanak-kanak dan remaja berisiko yang tinggal di rumah anak-anak yatim di Kota Bharu.

Metodologi: Kajian ini melibatkan dua peringkat. Peringkat pertama adalah peringkat penyaringan terhadap semua kanak-kanak dan remaja yang tinggal di rumah anak-anak yatim di Kota Bharu dengan mengunakan Soal Selidik Kekuatan dan Kelemahan (SDQ) versi Melayu. Pada peringkat kedua, semua kanak-kanak dan remaja yang dikenalpasti sebagai golongan beriko tinggi (10% yang mempunyai skor tertinggi dalam populasi) dan kes-kes yang terpilih dari golongan berisiko rendah (90% dari populasi) telah ditemuramah untuk menentukan jenis penyakit berdasarkan ICD 10.

Keputusan: Berdasarkan skor SDQ pada peringkat penyaringan, untuk data diri sendiri, 27 (12%) dari kanak-kanak dan remaja mempunyai skor dalam kumpulan berisiko tinggi dan 193 (88%) mempunyai skor dalam kumpulan berisiko rendah. Data guru pula menunjukkan 25 (11%) kanak-kanak dan remaja mempunyai skor di dalam kumpulan berisiko tinggi dan 195 (88%) mempunyai skor di dalam kumpulan berisiko rendah. Di peringkat kedua, data diri sendiri menunjukkan 24 (10.9%) dari responden mempunyai diagnosa psikiatri dan data guru pula menunjukkan 18 (8.2%) mempunyai diagnosa psikiatri.

Kesimpulan: Morbiditi psikiatrik adalah kerap terjadi di kalangan kanak-kanak dan remaja yang tinggal di rumah anak-anak yatim. Keputusan ini menunjukkan fokus terhadap pencegahan dan pengenalpastian pada peringkat awal kanak-kanak dan remaja yang memerlukan rawatan hendaklah dipertingkatkan. Program saringan di dapati berguna untuk mengesan morbiditi psikiatrik di kalangan kanak-kanak, oleh itu dapat memperbaikkan lagi jalan ke arah keberkesanan rawatan.

CHAPTER 1 INTRODUCTION

Psychiatric disorder affects a significant proportion of the population of children and adolescents in society. The distribution of mental disorder varies by age, sex and socioeconomic status.

An important characteristic of child psychiatric disorders lies in the degree to which they affect different aspects of the child and the family. The family of a seriously disturbed child will require the services of many different types of professional, drawn especially from the health, education, and social welfare services.

1.1 Theories of development and its disorders

Biological theories

a) Genetic factor

The development of the brain and other neural structures is largely under genetic control. Twin studies have demonstrated that many aspects of learning as well as some features of temperament and personality are influenced by multiple genes, and occasionally by the effects of single genes. Genetic anomalies are also probably responsible for a small number of child psychiatric disorders such as autism. In others such as the hyperkinetic syndrome (attention deficit hyperactivity disorder) there is a significant genetic influence, but environmental factors such as the quality of parental

care may, in some cases, play a significant part. Most psychiatric disorders of childhood, are produced by an interaction of genes and environment (Eaves et al. 1997).

b) Brain damage or dysfunction

This may occur before, at, or after birth. Damage to the fetus may caused by physical illness in mother, such as rubella or maternal phenylketonuria, or by toxins such as alcohol or illicit drugs. Damage to the brain at birth may arise as a result of a traumatic delivery. It is often difficult to know whether pre-existing abnormalities in the fetus have been, at least in part, responsible for a prolonged or otherwise abnormal delivery, or whether the birth itself is solely responsible for subsequent brain dysfunction. After birth, damage to the brain may occur as a result of various insults such as trauma to the head or a cerebral infection. The presence of brain damage or dysfunction in a child may give rise to physical symptomatology such as a hemiplegia or epilepsy, or to learning disabilities, sometimes of a specific nature. In addition, it has a non-specific effect on liability to show emotional or behavioural problems.

c) Other physical influence

These include metabolic abnormalities, such as hypoglycaemia or hyperglycaemia, anaemia, or chronic infections such as that caused by the human immuno-deficiency virus.

Behaviour or learning theories

Early learning theories, such as those put forward by John Watson (1878-1958), suggested that all forms of behaviour and emotional expression were learned as a result of experience (Graham, P. et al. 1999). The role of internal mental processes could thus be ignored. One could understand behaviour simply by studying the stimuli to which the organism was exposed, and noting the responses.

Cognitive and cognitive behaviour theories

The main contributor to early cognitive theory was Jean Piaget (1896-1980). He carried out countless observational experiments on children of different ages (Graham, P. et al. 1999). He described four major phases of cognitive development:

a) Sensorimotor phase. Below 2 years the infant understands the world directly through perception and action. He learns directly from what he can see, hear, feel, and taste, as well as from the results of his own activity impinging on the external world.

b) Pre-operational phase. From 2-6 years the child is now able to make mental representation of objects, and imagine actions related to them, but he is still completely egocentric, unable to imagine the world from the perspective of other people.

c) Concrete operational phase. From 7-11 years the child is able to think logically, but only in concrete terms. The perspective of others is now fully appreciated.

d) Formal operational phase. From 12 years the child is able to think in abstract terms and develop concepts of, for example, the relatively of man-made rules.

Piaget's ideas have needed considerable modification since he first formulated them. It is clear that his emphasis on laboratory observation and on the results of formal experiment led Piaget to underestimate what children can do in real life. Piaget's ideas have, however, cast light on the egocentricity of the young child, and on the process of moral development in the child with a conduct disorder. An awareness of Piaget's concepts can alert the child health professional to take into account a child's level of understanding at different level of physical development.

Family theories

Although the classification systems in child psychiatry refer exclusively to pathology within the individual child, many clinicians regard the problems they see as better understood by considering the family as the unit in question. Family theories provide ways of conceptualizing the processes that go on within families that may result in one

family member, especially a child, being presented as a problem or a patient. Such theories include the following:

a) Systems theory. A family system is conceived as a functional unit operating according to its own rules, and with certain special characteristics. Such a concept can be applied to system of family functioning that would not be applicable to the functioning of individuals. Every change in the relationships between two family members is likely to result in changes in other relationships within the family, before the system reaches equilibrium again. Some family system are dysfunctional and work badly, especially those that are rigid and inflexible and cannot react to changing demands of children.

b) Communication theory. For a family to function well, messages between family members need to be transmitted and received and received unambiguously. Family life consists of a constant series of demands, requests, and injunctions to do or not do this or that. There is also a flow of factual information not requiring immediate action but perhaps important for the future. Finally, there is a need for the communication of feelings. Children need to know when their parents feel warm and approving, as well as when they are upset and condemnatory. In dysfunctional families, one or more types of communication are often transmitted poorly or ambiguously.

c) Structural theory. The relationships in a family can be regarded as organized or 'structured' in a characteristic way. Minuchin (1974) describes a variety of ways in which family organization or structure can be dysfunctional. The inter generational boundaries may be lured, and parents behave like the brothers and sisters of the children. Conversely children may take care-taking roles in relation to their parents. Parents and children may be overinvolved or emotionally 'enmeshed' with each other, or they may be too uninvolved emotionally, disengaged, or detached.

Attachment theory

Bowlby describes attachment as a complex two-way process in which the child becomes emotionally linked to members of his or her family, usually the mother, father, and sibs in diminishing order of intensity. Bowlby described attachment, especially to the mother, as an adaptive, biological process serving the needs of the child for protection and nurture. He suggested that it can best be understood as a 'control system' in which proximity to the mother is maintained through a series of signals emitted by both mother and child. The later capacity of the child to develop social relationships is considered to be based on the way with which attachment behaviour is established (Bowlby, 1951).

1.2 Family influences

Some types of family structure are risk factors for behaviour and learning problems. This means that their presence is an indicator of an increased likehood of such problems being present.

About 90% of single parent families are headed by mothers and the rest mainly by fathers. Children living in single parent families are slightly more likely to be showing a range of behaviour and learning problems than those living in conventional families. This is partly related to the fact that single parents are financially less well off than are two parents, and financial stress may lead to less than satisfactory child care.

Socially deprived children, those exposed to poverty, high rates of parental unemployment, homelessness, or crowded living conditions, do show high rates of disorders, especially conduct problems. This is particularly the case if social adversities are multiple (Kolvin et al. 1988). Thus overcrowded housing circumstances, parental unemployment, and financial hardship may, if present singly, not act as risk factors, but if present in combination as they often are, their negative effect may be considerable.

Emotionally warm, continuous, sensitive care from parents or their substitutes is the main, but by no means the only necessary precondition for healthy psychological development. Its presence goes far to ensure the development of secure 'attachment' of the child to the parent. This quality to the parent-child relationship results in the young

child developing a whole range of adaptive forms of behaviour, including confident exploration of the environment and the appropriate seeking of parental protection when danger threatens.

1.3 Children living in orphanage

When the word "orphanage" is used, people typically cringe, imagining that the children who grew up in one had the crudest and cruelest of childhoods. Children raised in orphanages are more likely to have serious problems adjusting to society. Children reared in supportive, family-like environments will become better adults, parents and taxpayers.

Previous research has shown that children receiving substitute parental care tend to have high rates of emotional/behavioural disturbance, but uncertainty remains on the extent to which this derives from genetic risk, adverse experience before receiving substitute care, or from risks associated with substitute care experience.

Bowlby (1951) in his World Health Organisation monograph, conclude that children were seriously adversely affected by the absence of a close and continuous relationship with a care giving adult.

Institutionalized children are denied the opportunity to form a consistent relationship with a caregiver in their early years and are at serious risk for developmental problems and long-term personal disorders.

Many institutionalized children are insecurely attached. Institutionalized children lack sympathy, seek behaviour in negative ways, exhibit poor self-confidence, show indiscriminate affection towards adults, are prone to noncompliance, and are more aggressive than their non-institutionalized counterparts.

Goldfarb (1945) observed that the children in institutions: "more frequently showed problems such restlessness, hyperactivity, inability to concentrate, lack of popularity with children, poor school achievement, fearfulness and excessive craving for affection".

Similarly, Tizard and Hodges (1978) found that attention-seeking behaviour, restlessness, poor peer relationships, and disciplinary problems were the most frequent reported difficulties among children who had spent their early years in group residential care.

It is clear that children who are taken into care tend to come from very troubled families with multiple psychosocial adversities (Schaffer & Schaffer, 1968; St Claire & Osborn. 1987; Wolkind & Rutter 1973). Because of this, the high rate of emotional and

behaviour problems may be a consequence of vulnerability deriving from a combination of genetic risks and seriously adverse experience in early life.

1.4 Psychiatric disorders in children and adolescents

Disruptive behaviour disorders, oppositional defiant disorder and conduct disorder are common. Although some studies have reported that anxiety disorders are more common than any other disorders, many of the children with supposed anxiety disorders have worries of fears that do not result in much distress or social impairment.

While child mental health services tend to see more boys than girls, epidemiological studies do not show marked gender differences in the overall rate of psychiatric disorder – boys are more likely than girls to have a disorder before puberty, but the reverse is true after puberty. The sex ratio varies markedly with the type of problem. The usual age of onset also varies markedly from problem to problem, with some problems characteristically beginning early in childhood, and with other adult-type problems being much commoner in the teenage years than in earlier childhood.

Epidemiological studies have provided evidence for the aetiological importance of psychosocial, genetic and neurological factors. A particularly influential study of psychosocial factors involved a direct comparison of children from a run-down area of inner London with children from the small towns and countryside of the Isle of Wight. The same two-stages measures were applied to representative samples of 10-year-olds

from both areas. By comparison with the Isle of Wight children, the inner city children had roughly double the rate of conduct, emotional and reading disorders. These differences seemed to be attributably primarily to higher rates of the following psychosocial problems in the inner city: marital breakdown, parental illness and criminality, social disadvantage, and schools with high turnovers of pupils and teachers.

The first major epidemiological study of psychiatric disorders in childhood was carried out by Michael Rutter and his colleagues on the Isle of Wight. Since the pioneering studies of the Isle of Wight conducted in England in the mid-1960s (Rutter et al, 1970 & 1976), numerous surveys of child psychiatric disorders have been conducted throughout the world. In the past decade only, data from many such studies have been published (Brandenburg et al, 1990: Verhulst & Koot, 1991).

Early surveys of the prevalence disorder reported rates of 17.5% (Lagner et al., 1974); 21.0% (Graham & Rutter, 1973); 25.4% (Rutter, Cox, Tupling, Berger, & Yale, 1975); and 26.0% (Verhulst, Berden, & Sanders-Woudstra, 1985). However, many of these earlier studies were characterized by inconsistencies such as child and adolescent samples obtained exclusively from medical centers, employment of questionnaires which were not validated against clinical judgment, differing types and definition of disorder, and different diagnostic systems utilized. These data need to be interpreted with an alarming degree of caution.

Population studies on the prevalence of psychiatric disorders among children and adolescents in different countries have reported varying rates of disorders ranging from 10 per cent in Australia, 11.5 per cent in New York city, USA, 17.2 per cent and 6.8 per cent in UK, 15.8 per cent in Puerto Rico, 16.2 per cent in Germany, 30 per cent in New Zealand and 17 per cent in New York State, USA. In a review of epidemiological studies conducted in the last decade, it has been reported that most studies have used diverse methods of case ascertainment and definition; half of the studies used multistage, multi-informant methods; some of them employed measures of severity, impairment and global functioning to enhance the specificity of case ascertainment. The overall estimates of moderate to severe disorders ranged from 14-20 per cent.

Of the more recent research, the Ontario Child Health Study (OCHS: Offord et al., 1987) which was conducted in Canada with 2674 children and adolescents aged between 4 and 16 years, reported an overall six-month prevalence rate for conduct disorder, hyperactivity, emotional disorder (anxiety and depression), and somatisation (sickliness without causes) of 18.1%. The prevalence rate in children aged 4 to 11 years was higher among males than females (19.5% vs 13.5%), while the reverse was true among adolescents aged 12 to 16 years (18.8% males and 21.8% females). Adolescent males were also found to have a higher prevalence of conduct disorder (8.1% vs 2.7%) and hyperactivity (8.9% vs 3.3%) than females, with the older age group (12-16%) reporting significantly higher prevalence than the younger age group (4-11 years).

The Puerto Rico Child Psychiatry Epidemiologic Study, (PRCPES: Bird et al., 1988) reported a similar six-month prevalence rate of 17.9% for 6 to 16 year-olds. Rates of disorders across three age groups in this sample (4-5 year olds, 6-11 year-olds, and 12-16 year-olds) indicated that the prevalence rate of attention deficit hyperactivity disorder was lowest in the youngest age group (4-5 year-olds), compared to the two older groups. Also the rate of depression was higher in each successively older group, while separation anxiety disorder was found at a higher rate in the 6 to 11 year-old group than in both the younger and older groups.

Two separate studies, the New York Child Longitudinal Study, (NYCLS: Velez et al., 1989) and the Dunedin (New Zealand) Multidisciplinary Health and Development Study (DMHDS: McGee et al., 1990) reported prevalence rates for disorder of 17.7% (9-18 year–olds). In the DMHDS (McGee et al., 1990), prevalence rates of disorder were reported as 25.9% for females and 18.2% for males, with the overall female predominance for disorder being attributed to higher prevalence of anxiety disorders and depressive disorders. Data also revealed a male:female ratio for diagnosis in 11 year-olds of 1.3:3. Males exhibited more attention-deficit hyperactivity disorder, conduct disorder, oppositional defiant disorder and depression, while girls more commonly exhibited anxiety disorders.

Kashani et al. (1989) also found higher rates for anxiety disorders among girls: 28.6% of 7 to 17 year-old females reported generalized anxiety disorder in comparison

with 13.3% of boys. Oppositional defiant disorder rates in 14 to 16 year-old adolescent was also found to be higher for girls (8%) than boys (4%).

The most recent survey comprising prevalence data is the Western Australian Child Health Survey (WACHS: Garton, Zubrik, & Silburn, 1998) which reported that "mental health morbidity" was identified in 17.7% of the sample, with 12 to 16 year-olds displaying a higher morbidity than 4 to 11 year-olds (21% versus 16%). In addition, more 4 to 16 year-old males (20%) presented with a disorder than females (15.4%).

Prevalence rates reported for individual disorders are characterised by greater variance. For example, the prevalence of generalized anxiety disorder has been reported from as low as 1.6% (Wittchen, Zhao, Kessler, & Eaves, 1994) to as high as 21% (Kashani, Orvaschel, Rosenberg, & Reid, 1989).

1.5 Local study of psychiatric disorders among children

The first epidemiological survey of psychiatric disorders among children in a Malaysian village was done in 1985 by K. Kasmini, O.Kyaw, S. krishnaswamy, H. Ramli, S. Hassan. This paper was published in 1993. The WHO Research Questionnaire for Children (RQC) was used for initial screening followed by a semistructured interview, the Follow-up Interview for Children (FIC) at its second stage. Diagnoses were obtained by using Rutter's multi-axial classification. The prevalence rates obtained for the diagnostic categories were described in 3 age groups, in accordance with the age of

attending school in Malaysia. Of 507 children screened aged 1-15, 6.1% were classified as having a psychiatric disorder.

Lee T.C et al (1996) used Research Questionnaire for Children (RQC) devised by WHO to detect psychiatry morbidity among children and adolescents from entire country in Malaysia. A total of 14 550 children and adolescents were involved in this study. Their parents or guardians were required to complete the RQC. The survey was conducted between the period of April to July 1996. The overall adjusted prevalence of psychiatry morbidity was found to be 13 % (11.5% - 14.6%). Significantly higher prevalence was found in rural location (15.5%) as compared to the urban (10.5 %), non-Malaysian children (30.6%) as compared to Malaysian (12.9%) and those children with associated physical illnesses like asthma, cancer, physical disability, speech disability and hearing impairment. Other findings, though not reaching statistical significance, showed that psychiatric morbidity was higher in females, among Indians and other Bumiputra, in the 10 – 12 years age group and those who came from households with income less than RM 1000.00.

CHAPTER 2 OBJECTIVES

General objective

The study aims to characterize the psychiatric morbidity and associated factors among children and adolescents at risk living in orphanages around Kota Bharu.

Specific objectives

- To screen the psychiatric morbidity among children and adolescents living in orphanage by using the Strength and Difficulties questionnaire (SDQ).

- To determine the association of high risk group based on SDQ score and the socio-demographic variables.

- To describe the common psychiatric morbidity among children and adolescents living in orphanage based on ICD-10 diagnosis.

CHAPTER 3 METHODOLOGY

3.1 Study design

This is a cross sectional study. This study was conducted from February till August 2005.

3.2 Study population

The study was conducted in orphanages located in Kota Bharu area and the school attending by the children. Kota Bharu has three orphanages, two orphanages (Darul Aitam Putera and Darul Aitam Puteri) are supported by the Kelantan state government and one orphanage (Rumah Puteri Harapan) is supported by a non-governmental organization (NGO). All children and adolescents who are living in orphanage aged 7 to 17 years and fulfill the inclusion criteria were included in the study (please refer to page 19 for the details). Children and adolescents were asked to complete the set of questionnaires at their orphanage with a researcher always present in order to ensure independent and confidential responding and to provide assistance when necessary. After completion of the self-rating SDQ, the researcher and the research assistant delivered the teacher-rating questionnaires to the class teachers of the respondents. The complete questionnaires were collected after one week.

3.3 Sample size

A single proportion formula was applied to determine minimum required sample size. The calculation was as follows :

$$n = \frac{(Z)^2 \times P(1-P)}{(\Delta)^2}$$

$$= \frac{(1.96)^2 \times 0.20(1-0.20)}{(0.05)^2}$$

$$= 246$$

n = required sample size

P = probability = 0.20 (based on the prevalence of psychiatric disorder in children in previous study)

Z = value of standard normal distribution with two standard deviation at 95% CI = 1.96

Δ = precision = 0.05 (within 5% of true value in proportion

Expected drop out = 25% of 246 = 61

Therefore required minimum sample size = 246 + 61 = 307

3.4 Sampling technique

Case study was chosen from all children and adolescents aged 7 to 17 years living in three orphanages in Kota Bharu . Children and adolescents were asked to complete the set of questionnaires at their orphanage and questionnaires for teachers was send to the school attended by the children. The complete questionnaires were collected after one week.

3.5 Inclusion and exclusion criteria

Inclusion criteria

a) All children who are living in orphanages in Kota Bharu area aged 7 to 17.

b) Children and teachers who provide informed consent.

c) Children and teachers who are literate.

Exclusion criteria

a) Children or teachers who refuse to participate

b) Children and teachers who are unable to read or write.

3.6 Measurement tools

1. Personal Demographic Data and psychosocial characteristics consists of :

   (a) Age

   (b) Gender

   (c) Religion

   (d) Ethnic group

   (e) Number of siblings

   (f) Duration of stay in the orphanage

   (g) Parents status

   (h) Caregivers

   (i) Occupation of the caregivers

   (j) Monthly salary of the caregivers

   (k) Relationship with parents or caregivers

   (l) Relation to person who support the children

   (m) Reason of staying in the orphanage

2. Strength and Difficulties Questionnaires.

The Strengths and Difficulties Questionnaire (SDQ) is a brief screening measure that is being employed increasingly for the purpose of identifying behavioural and emotional problems in children and adolescents. The SDQ can be administered to the

parents and teachers of 4- to 16-year-olds and to 11- to 16-year-olds themselves (Goodman, 1997, 1999; Goodman et al, 1998).

Evaluation of children's emotional and behavioural development is a central component of social work assessment. The SDQ is a brief measure covering the most important current domains of child psychopathology (i.e. emotional symptoms, conduct problems, hyperactivity-inattention, and peer problems as well as personal strengths (i.e. prosocial behaviour) that can be completed by parents, teachers, and youths themselves. These scales are similar to older scales such as Rutter A & B Scales developed for use by parents and teachers, but put a greater emphasis on strengths.

It exists in several versions to meet the needs of researchers, clinicians and educationalists. All versions of the SDQ ask about 25 attributes, some positive and others negative. These 25 items are divided into 5 scales :

1. emotional symptoms (5 items)
2. conduct problems (5 items)
3. hyperactivity/inattention (5 items)
4. peer relationship problems (5 items)
5. prosocial behaviour (5 items)

The prosocial behaviour address strengths and other items address difficulties.

The scales takes about 10 minutes to complete. For each item the respondent marks in one of three boxes to indicate whether the item is not true, somewhat true or

certainly true for the child in question. Each item is scored 0, 1 or 2. Somewhat true is always scored 1, but whether Not true and Certainly true are scored 0 or 2 depends on whether the item is framed as strength or difficulty. Scores for the prosocial and individual difficulties subscales can range from 0 to 10. A higher score for strengths corresponds to positive behaviour. A lower score for difficulties corresponds to less difficult behaviour. The total difficulties subscale is the sum of the individual difficulties subscale and scores can range from 0 to 40., with a lower score indicating less difficult behaviour.

An informant-rated version of the SDQ can be completed by either the parents or teachers of children and teenagers aged between 4 and 16, while a self-report version of the SDQ can be completed by young people aged between 11 and 16, depending on their level of understanding and literacy. Questionnaires for self-completion by adolescent ask about the same 25 traits, though the wording is slightly different (Goodman et al, 1998).

The informant-rated version has recently been shown to function as well as the long-established Rutter questionnaires while offering some additional advantages (Goodman, 1997). The informant-rated SDQ also seems at least as good as the Child Behaviour Checklist (CBCL; Achenbach, 1991) at detecting conduct and emotional problems, and better than the CBCL at detecting inattention and hyperactivity (Goodman & Scott, 1999).

The self report version of the SDQ has been shown to discriminate satisfactorily between community and clinic samples (Goodman, Meltzer, & Bailey, 1998). Caseness cutoffs on the SDQ total difficulties score can be used to distinguish between cases and noncases (Goodman, 1997; Goodman et al., 1998).

The English version of SDQ had been translated into Malay and back translated by Dr Abang Bennet Taha following the usual back translation technique (Youth*in*mind, 2001). This study using the Malay version of SDQ.

3.7 Method of data collecting

The study employed the classic two-stage epidemiological design.

Stage 1

In the first stage, all the children who were staying at the three orphanages in Kota Bharu area and fulfill the inclusion criteria were included in this study. All the schools that attended by the children were involved in this study. Principals of the schools chosen were contacted for permission to undertake the study. Children were screened using the Malay version of SDQ, handed out to them and their teacher by researcher and research assistance.

Stage 2

For the second stage, the children and adolescents were categorized into three groups based on SDQ score (1. High difficulties group 2. Medium difficulties group 3. Low difficulties group). The children and adolescents who were categorized under high difficulties group (extreme 10% of population) were defined as a high risk group. The children and adolescents who were categorized under medium difficulties group and low difficulties group (90% of population) were defined as a low risk group. As noted by Goodman, a Total Difficulties scale score at or above the 90^{th} percentile predicted a 15-fold increase in the likelihood of and independently diagnosed psychiatric disorder.

All the children and adolescents who were identified as high risk group were selected for further interview. However for the low risk group, all the children and adolescents who were categorized under medium difficulties group and 20% from low difficulties group were selected for further interview. Children and adolescents in the low risk group underwent second-stage interviews to estimate the number of cases missed on screening (false negative). This method corresponds to the study done by Bilenberg (2005).

Interviews of the selected cases were done within 2 to 4 months after the child was screened. Each interview with the child lasted 30-45 minutes. All the interviews were done face-to-face with the respondents by the researcher. The diagnosis was based on information obtained from the history, the mental state examination and the presence