THE CHILD BEHAVIOUR CHECKLIST: A NEW ZEALAND PILOT STUDY

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Abstract

In this study, Child Behaviour Checklist (CBCL/4-18) and Youth Self Report (YSR) data was collected for 11 to 15 year old New Zealand adolescents, and compared with U.S. normative data to determine the appropriateness of using U.S. norms in the New Zealand context. Forty-two parents and 51 students completed the CBCL/4-18 and YSR questionnaires respectively. Comparison of CBCL/4-18 mean scale scores showed that New Zealand girls scored significantly lower than U.S. girls on the Withdrawn scale (less withdrawn), and New Zealand boys scored significantly higher on the School Competence scale (more competent). New Zealand – U.S. comparison of YSR mean scale scores showed that New Zealand boys scores significantly lower than U.S. boys on the Withdrawn, Anxious/Depressed, Attention, Internalising and Total Problem scales. New Zealand girls scores lower on the Anxious/Depressed and Internalising scales.

The study also compared the responses of students who have not experienced traumatic brain injury (TBI) with those obtained form students who have previously experienced TBI, to determine whether the CBCL/4-18 is biased by the symptoms of neuropathology, masking as psychopathology. Boys who have experienced TBI scores higher on the Somatic, Thought, Attention, Delinquent, Aggressive, Externalising and Total Problem scales, and lower on all the competence scales, compared with boys who have not experienced TBI. Girls who have experienced TBI scored higher on the Withdrawn, Social, Attention, Aggressive and Total Problem scales, and lower on the Activities, School and Total Competence scales compared to uninjured girls.

When comparing YSR mean scale scores for New Zealand boys and girls, boys scored significantly lower than girls on the Withdrawn, Somatic, Internalising and Total Problem scales. Considering the small sample sizes, these results should be viewed with caution, and future research, involving more participants of a wider age range, could contribute valuable information.

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OVERVIEW

The Child Behaviour Checklist (CBCL/4-18), Youth Self-Report (YSR) and Teachers Report Form (TRF) are psychological instruments designed to obtain data on both the competencies and emotional and behavioural problems of children and adolescents (Achenbach, 1991). Utilising a standardised format, different informants, including parents, teachers and the children themselves, rate the child's behaviour (Achenbach, 1991; Achenbach & Edelbrock, 1983; Impara & Plake, 1998). The CBCL/4-18 is one of the most widely used and researched measures of child and adolescent behavioural and emotional functioning in the world (Berg, Fombonne, McGuire, & Verhulst, 1997; Biederman, Faraone, Mick, Moore, & Lelon, 1996; Bond, Nolan, Adler, & Robertson, 1994; Dedrick, Greenbaum, Friedman, Wetherington, & Knoff, 1997). It is also widely used in New Zealand (Patchett-Anderson, 1997).

In order to accurately interpret ratings and reports, it is necessary to compare the individual's results with results from similar others, obtained under similar conditions (Achenbach & Edelbrock, 1983; Anastasi & Urbina, 1997). The normative samples used for the CBCL/4-18, YSR and TRF problem and competence scales were drawn from a sample of non-referred American children and adolescents (Achenbach, 1991a,b). It is therefore important to determine the extent to which it is appropriate to use U.S. norms in a New Zealand context. It is also important to calibrate assessment procedures across cultures and countries, as this allows for comparison between the groups in order to support cross-cultural robustness of findings (Achenbach, 1991a,b). Taking into account cultural, educational and socio-economic differences between the New Zealand and U.S. populations, it is possible that there could be observable differences in child and adolescent behaviours between the two countries. Such differences could affect the prevalence and form disorders take, as well as the way they are treated.

The first aim of this study, therefore, is to obtain data from young New Zealanders on the CBCL/4-18 and related instruments so that comparisons can

be made between the two sets of norms in order to examine whether it is appropriate to use normative data obtained in the U.S. A second line of investigation in the current study focuses on the use of the CBCL/4-18 with children that have experienced traumatic brain injury (TBI) to determine the extent to which the CBCL/4-18 is biased by symptoms of neuropathology masking as psychopathology. It has already been demonstrated that certain measures of psychological functioning (e.g., MMPI-R, SCL-90-R and the BDI) are spuriously raised when used in specific adult populations with neurological disorders, as some of the symptoms of psychopathology are also the outcomes of neurological conditions (Leathem & Babbage, 1999; Lezak, 1995; Sliwinski, Gordon, & Bogdany, 1998). As a result, without careful interpretation, it may be suggested that such persons are experiencing psychopathology when they are not. The extent to which this occurs in children, and on the CBCL/4-18 in particular, is currently unclear. Traumatic brain injury, for instance, may result in attention deficits (eg., reduced auditory span, mental tracking problems and distractibility), memory disorders, fatigue, performance inconsistency, motivational defects, depression, and frustration (Benton, 1989; Lezak, 1995) which could greatly impact on the CBCL/4-18 results.

In summary, the aims of the current study are to:

1. Compare CBCL/4-18, Youth Self-Report and Teachers Report Form responses obtained from non-referred New Zealand youths attending intermediate schools, with those responses obtained from U.S. students to establish the extent to which the two sets of data are equivalent.
2. Compare CBCL/4-18 responses of non-referred New Zealand youths (normative data) with results obtained from individuals who have previously suffered traumatic brain injury to determine the degree to which symptoms of brain injury are endorsed and distort results.

The current study focused on students between the ages of 11 - 15 years because of time constraints and scope limitations due to this study being at master's research level.

Background to behavioural assessment and child development is covered in Chapter 1, the CBCL/4-18, YSR and TRF with relevant research findings is reviewed in Chapter 2 and relevant aspects of childhood traumatic brain injury are covered in Chapter 3. The specific aims and hypotheses developed for the current study as related to the preceding background information are set out in Chapter 4, followed by method in Chapter 5. Results are reported in Chapter 6, and discussed within the context of the background literature in Chapter 7.

Chapter 1

BEHAVIOURAL ASSESSMENT OF CHILDREN: AN OVERVIEW

The purpose of a clinical assessment is to gather sufficient information to gain an understanding of the severity and context of the problems experienced by an individual, and assist in the development and evaluation of a treatment program (Davidson, 1997). A comprehensive assessment typically involves a thorough review of background materials, a clinical interview, and psychometric assessment, either via checklists or questionnaires, or clinician administered (McClellan & Werry, 2000).

A comprehensive assessment is probably best achieved by combining data obtained from a structured or semi-structured interview during the clinical interview, with the later addition of information provided through the use of checklists and questionnaires. This is especially the case with children who are typically referred by significant adults in their lives, and they may not necessarily experience the same feelings of distress as the referrer. They therefor may not engage as readily as adults do in the interview situation. Children also undergo rapid behavioural, social, cognitive and emotional changes, and it is important to consider genetics, developmental stage and social context during a thorough assessment (La Greca, Kuttler, & Stone, 2001). Thus, the comprehensive evaluation of the young person should ideally include clinical interviews with the parents, the child, the family, and important others, for example, schoolteachers, to obtain information regarding academic achievement, as well as a standardised assessment of intellectual and developmental level.

Different aspects of assessment will be reviewed in this chapter, including assessment tools (interviews and rating scales), the importance of valid and reliable instruments, and the value of multiple informants in child assessment. This is followed by a brief overview of child development focussing on adolescence. As this study is about assessing competencies and emotional and behavioural problems in the developmental and social context,

the chapter concludes with some of the factors that plays a role in defining normal behaviour.

Assessment

The Diagnostic Interview

The diagnostic interview is a critical, standard component in assessment. It allows sufficient flexibility to understand the evolution of problems and establish the role of the environment. Structured interview formats used with children need to be developmentally appropriate with regards to the child's cognitive and language abilities. Interviews have been rated as superior to free reporting for obtaining full and detailed information about symptoms (Kaplan & Sadock, 1998) and are described in terms of their degree of structure.

In highly structured interviews, the examiner asks set questions, using specific wording in order to follow an outlined script. The semi-structured interview allows the examiner to use their own probe questions and to add other sources that might supply relevant information. Structured and semi-structured interviews based on the Diagnostic and Statistical Manual, Fourth Edition (DSM-IV) (American Psychiatric Association, 1994) criteria have been designed to provide numerical scores on diagnostic scales to assess illness severity and to monitor recovery. These interviews are used in clinical settings, as well as in research settings where they help to standardise subject cohorts and provide objective outcome measures to assess treatment responses (Kaplan & Sadock, 1998). Examples of these interviews include the Hamilton Rating Scale for Depression (Hamilton, 1967), the Structural Clinical Interview for DSM-IV Dissociative Disorders (SCID-D), Diagnostic Interview for Children-Revised (DISC-R) and the Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS).

Rating Scales (Questionnaires and Checklists).

Rating scales are easy to administer and are time efficient and reliable, whether they are administered to individuals or groups. They provide normative

information to enable comparison of an individual's ratings with those of similar others (Frick & Kamphaus, 2001). They are, however, limited to structured scores for standardised items, and do not allow for probing of responses (Verhulst, & van der Ende, 1991). A limitation of rating scales are that they assess the person's perception of their emotions and behaviours, and perceptions are affected by different factors, such as biases, differences in raters standards, and misconception based on incomplete information or limited understanding. The client and/or parents, teachers and any other significant individuals involved with the client, may complete rating scales to provide information relevant to the client's different areas of functioning.

The focus of a rating scale may be on either a narrow, specific set of symptoms, e.g., Connors Parent Rating Scale for Attention Deficit Hyperactivity Disorder (Connors, 1970), or on broader domains of psychopathology, e.g., CBCL/4-18 (Achenbach, 1991a,b).

Validity and Reliability

Age and education have a significant effect on performance. It is therefore important to use valid and reliable measures for children and adolescents that have norms that are applicable to their particular age, stage of development and level of education. Standardised assessment instruments permit the valid and reliable interpretation of the meaning of a test score, taking into account a range of variables, including age, gender, education and/or occupation, race, culture and geographic region (Cicchetti, 1994; Frick, & Kamphaus, 2001; Lezak, 1995). Aspects of reliability and validity that should be considered in the evaluation of a psychological measure for possible use are summarised in Table 1.1.

Reliability refers to the consistency in results obtained when re-assessing the same person: with the same test on different occasions (test-retest reliability), or with different sets of equivalent items (parallel/alternate-form), or under variable conditions or to the consistency between different observers' assessment of the same person (inter-observer reliability). Reliability provides

information regarding error of measurement of a single score, which enables the examiner to predict possible variation in an individual's test scores as a result of irrelevant or chance factors (Anastasi & Urbina, 1997; Cicchetti, 1994). As retest reliability decreases over time, the interval between testing times should be stated.

Validity is defined as the extent to which a particular instrument measures what it claims to measure and how well it does that. Procedures that determine test validity report on the relationship between performance on a particular test and other independently measured observable facts about the behaviour under consideration (Anastasi & Urbina, 1997; Cicchetti, 1994; Foster & Cone, 1995).

Table 1.1

Important aspects of Test Reliability and Validity

Test-retest reliability	Correlate test scores obtained by the same person on two test administrations, and is an indication of the extent to which test scores can be generalised over different occasions.
Alternate/parallel-forms	The same person is re-tested using an equivalent test form. The reliability coefficient obtained is a measure of both temporal stability and consistency of responses to different sample items.
Interobserver/scorer reliability	Two observers observe the same test/behaviour and the independently obtained scores are compared. This is especially important in subjective assessment of behaviour.
Internal consistency	Information on consistent content sampling is obtained by dividing the test into equivalent halves.
Face validity	Face validity provides information on whether the test looks appropriate for its use. What does it superficially appear to be measuring?
Clinical validity	Indicates whether predictions based on test results add incremental value in decision-making.
Concurrent validity	Concurrent validity refers to the extent to which an instrument correlates with criterion data (eg. similar and earlier instruments) already available.
Construct validity	This specifies the extent to which the test measures a theoretical construct or trait.
Content validity	Indicates the extent to which the test covers a representative sample of the behaviour domain it sets out to measure. Does the stimuli ask for construct relevant responses?
Criterion-related validity	Relate scores on the measure to other external criterion or practical value: Criterion prediction validity indicates the effectiveness of the test to predict the individual's performance in a specified activity.
Discriminant validity	This indicates that a measure does not relate to other measures of characteristics that it should be independent from.
Convergent validity	Convergent validity is an indication of the correlation between different measure that assesses the same constructs.
Ecological validity	Ecological validity refers to whether or not observed behaviour can be generalised from the laboratory to natural behaviour in the world. It is also concerned with how test scores correlate with everyday functioning.

Multiple Informants

Interviews and rating scales used in the assessment of children and adolescents often include versions for different informants to complete. The perspectives of different people involved with the child in the different contexts that the child function, e.g., parents and teachers, as well as that of the child, can then be included when assessing severity and treatment outcomes.

Carr (1999) and Davidson (1997) suggest a multi-systemic approach to assessment and treatment. They conceptualise children's psychological problems as being nested within multiple systems, including the child, the family, school, and the wider social network. Assessment and intervention must address the systems relevant to the aetiology and maintenance of the particular problems the child is experiencing. Rutter (1997) suggests the use of multiple diagnostic tools, with repeated measures over time to successfully minimise error. Achenbach, McConaughy and Howell (1987) and Achenbach (1991, 1999) advocate the use of a multi-axial assessment approach. Assessment should provide information from different sources, including physical examination (medical), cognitive and achievement tests, the child's emotional/behavioural problems and competencies as observed by parents, and teachers, and direct assessment of the child through the clinical interview, self-reports and direct observations.

As different informants contribute different information, low correlation between different informants, instead of being equated with unreliability, may be an indication of differences in target behaviours across situations, i.e., home, school, clinic and neighbourhood. Achenbach, McConaughy and Howell (1987) found a mean correlation of .28 between different kinds of informants, and a mean correlation of .22 between children's self-ratings and those by parents. This indicates that each type of informant contributes a considerable amount of variance not accounted for by others, and that another informant's report cannot be used as a substitute to self-reports (Verhulst & van der Ende, 1991). There are currently no guidelines to assist clinicians and researchers in the weighting of discrepant informant reports. This means that the assessment outcome of an individual may vary

depending on the choice of informants, as well as the agreement between different informants (Offord et al., 1996; Sawyer, Baghurst, & Mathias, 1992).

Research findings report inconsistencies between youth self-report and parents' reports when describing internalising and externalising behaviours, depending on the populations used in the research (Handwerk, Larzelere, Soper, & Friman, 1999). Community dwelling, compared to clinic referred children, reported more externalising and internalising problems than their parents. Clinic referred children, in contrast, reported more internalising and fewer externalising problems, compared to reports by parents (Edelbrock et al., 1986; Herjanic & Reich, 1982; Offord, Addler, & Boyle, 1986; Sawyer, Baghurst, & Mathias, 1992). It is generally excepted that youths are better at describing internalising states, while adults are better at describing observable or objective (acting-out or externalising) behaviours in children. Different factors that may influence this pattern of reporting include the possibility that children are more likely to be referred for problems apparent to parents and teachers, and children may report fewer externalising problems because of fear of punishment.

The selection of the most appropriate test for a particular client depends on a number of considerations, including the goal of the examination, the characteristics of the tests, and the characteristics of the client. It is important to choose measures with good psychometric properties in order to increase confidence regarding inferences made from the test score.

Child Development

Interpersonal dynamics, individual traits, and the social context in which children live (i.e., socioeconomic background, historical factors, culture and ethnicity) influence the development of the individual (Compas, Hinden, & Gerhardt, 1995). Children are both influenced by and exert influence over their social environment. Their thinking is changed through their interaction with the environment and maturation (Weiten, 1989). Accordingly, any rating scale purporting to measure behaviour in children should take into account the contextual variables as outlined above, as well as stages of development.

Different theories have been proposed over time to explain the development of an individual's personality from infancy, through early and middle childhood, to adolescence. The theories of Eric Erickson (1902 – 1994) and Jean Piaget (1896 – 1980) are of the most prominent. Erickson divided the life span into eight stages. In each stage, a psychosocial crisis that involves transitions through important social relationships is experienced, and personality is shaped depending on how we deal with the crises. Erickson theorised that personality evolved over the entire life span, but that early childhood events left a permanent mark on adult personality. Piaget considered children's thought processes and proposed four major stages of cognitive development: sensori-motor, preoperational, concrete operations and formal operations periods. Piaget suggested that children acquire knowledge though assimilation (interpretation of new experiences using existing mental structures) and accommodation (changing mental structures to explain new experiences).

Adolescence will be reviewed here, as this is the age group that the current study focuses on. Adolescence is the transitional period between childhood and adulthood that is characterised by inter-related biological, social, cognitive and psychological developmental changes. Adolescence is roughly divided in three periods: early (11 - 14 years), middle (14 - 17 years) and late adolescence (17 – 20 years) (Santrock, 1998; Steinberg & Meyer, 1995), and terminates in adulthood. It is important to remember that growth and development occur on a continuum, which makes these divisions somewhat arbitrary.

Puberty, the physical change process characterised by development of secondary sexual organs, is distinguished from adolescence, a psychological process of change. Ideally, these processes happen simultaneously, but when they do not, stress is increased in a developmental period that is for some adolescents an already stressful period. Information about the changes, as well as a positive attitude, can minimise the disrupting effects of change for the adolescent. When physical change is coupled with other life changes, for example, changing schools or parental divorce, adjusting to puberty can be more difficult, and can result in a loss of self-esteem (Steinberg & Meyer, 1995).

Although adolescence was historically viewed as a time of inherent stress and storm, it is now seen as a time for growth and positive development (Compas, Hinden, & Gerhardt, 1995). Researchers suggest that the difficulties and problems adolescents experience should not be considered solely in terms of their disruptive nature and their contribution to stress and crisis, but also with regards to the coping responses they evoke in the young person concerned. This shifts the focus from crisis to coping (Gibson-Cline et al., 1996).

Puberty

Five of the physical changes associated with puberty include (Malina, 1990; Marshall, 1978): rapid growth in skeletal dimensions and some internal organs, and weight gain; development of sex characteristics and reproductive organs; changes in body composition resulting from changes in the amount and distribution of fat; and development of the circulatory and respiratory systems, which leads to greater strength and stamina, especially in boys.

The average age of rapid growth onset for girls and boys is about 11 years and 13 years, respectively. There exists great individual variation in not only the age of onset, but also the time it takes to pass through the different stages of development in order to reach sexual maturity (Marshall, 1978). The timing of physical maturation varies greatly between different cultures, and even within a single society. Maturation timing and rate is dependent on genetic and environmental factors, although environmental factors, especially nutrition and health, control the extent to

which genetic predisposition is realised (Marshall, 1978; Santrock, 1998; Steinberg & Meyer, 1995).

Physiological changes (e.g., increases in circulating hormones) necessary for physical and sexual maturation may also be related to psychological changes observed in adolescence. Research findings on the possible role that hormones play in the mood regulation of adolescents have found that, although higher androgen levels may relate to sad and anxious affect, rebellious and delinquent (acting out) behaviour and aggression in teenage boys, it also relates to better adjustment (Susman et al., 1987). High levels of oestrogen have similarly been positively associated with verbal aggression and higher levels of depression in adolescent girls, although this finding has been more controversial. It has been postulated that adolescent girls, because of earlier organisational influences of hormones and socialising practises that may be different for boys and girls (aggression is more acceptable in boys), may possibly be better able to inhibit their behavioural responses compared to boys (Inoff-Germain et al., 1988). Hormonal effects on behaviour depend on a variety of hormonal interactions and rapidly changing concentrations. The link between hormones and mood is not strong, though, and the interaction between environment and biological factors needs to be understood better (Steinberg & Meyer, 1995; Susman et al., 1987).

Adolescence

During adolescence, a secure sense of the self is achieved, and the adolescent identity crisis is partly resolved by the move from dependency to independence. Negativism is used in an active way to express feelings, and almost any issue is used to express independence. The adolescent attempts to establish a personal identity separate from the parents', but close enough to the family structure to be included. Peers become of increasing importance to an adolescent, and the most important relationships besides family are with people of similar ages and interests. As adolescents view themselves through the eyes of their peers, any deviation in appearance can result in diminished self-esteem. Peer acceptance is very important, and this can result in risk taking behaviour, due to either peer pressure, or the need to

prove or affirm independence (Kaplan & Sadock, 1998; Santrock, 1998; Steinberg & Meyer, 1995).

Thinking changes during adolescence from being concrete and absolute to being more abstract and relative (Keating, 1993). As children grow older, they develop the ability for hypothetical thinking, or to consider what they observe in terms of what is possible, rather than just what is real. Adolescents can reason in a more systematic and abstract way, and apply this ability when discussing concepts such as friendship, democracy, fairness and honesty in interpersonal relationships, politics and morality. Metacognition, or the ability to understand and control one's thinking (thinking about thinking), becomes more apparent as is seen in an increased tendency to introspect, be self conscious, and intellectualise. An intense preoccupation with the self results from this. It is during this stage that adolescents develop personal fables – erroneous beliefs that their thoughts, feeling and experiences are unique. This may contribute to risk taking behaviour ("It can't happen to me"), as adolescents frequently belief that they are immune to ordinary dangers (Elkin, 1978, cited in Steinberg & Meyer, 1995). Adolescent egocentrism also results in teenagers believing that everyone is always watching and evaluating them. This concern diminishes with increasing age as they come to realise that other people are more concerned with their own thoughts. Teenagers become increasingly able to consider things in a multidimensional way, incorporating more than one contributing factor to possible outcomes. This allows them to have more sophisticated and complicated relationships with other people. In contrast with children who look at things in absolute terms, adolescents are able to think in relative terms. This can cause them to become sceptical; doubting the certainty and questioning values of things they previously believed and accepted (Steinberg & Meyer, 1995). Although adolescence is frequently portrayed as highly stressful and disturbed, the majority of adolescents sampled around the world expressed a healthy self-image (Santrock, 1998).

Adolescents' problems are often associated with issues that deal with preparing them to take on adult responsibilities, creating new roles to interact with others, and developing definitions about the self that fit with these changing roles.

Problems also relate to changing environments, the socioeconomic environment they live in, and gender issues (Gibson-Cline, 1996).

Coping is defined as a type of problem solving that involves a transaction between the individual and their environment. Successful coping involves using environmental resources and using them productively, regardless of the problem experienced. Coping may be problem- or emotion-focussed, and may be active or passive in activity. Problem-focussed coping involves solving the problem experienced, while emotion-focussed coping involves reducing unpleasant emotions associated with the problem (Gibson-Cline, 1996).

Defining Normal Behaviour

As societies become increasingly diverse, the importance of the sociocultural contexts that influence development, including culture, ethnicity and gender deserve attention. More diverse societies lead to increasingly diverse behaviours as people negotiate culture, ethnicity and gender. When considering the duality between minority and majority cultures, care should be taken to not ignore individual differences between members of minority groups through stereotyping, or disregard ethnic and cultural features as if these characteristics have no bearing on clinical practice.

The increasing cultural diversity in societies makes it more difficult to assess normal behaviour and define mental ill health, as normality is defined by the repertoire of the assessor and client, which in turn is affected by the social milieu and the cultural experiences to which they have been exposed (Draguns, 1998). Assessment procedures that allow for reliable and valid assessment across multiple cultures can be used to determine the prevalence of particular problems within cultures, and prevent over or under assessment in minority cultures, due to the inclusion or exclusion of questions that taps cultural specific symptoms of psychopathology. This will prevent the misinterpretation of traits or characteristics accurately measured (Oesterheld & Haber, 1997).

There are many factors that can contribute to the difficulties young people may experience that can influence normal development. A thorough assessment takes

into account contextual variables as outlined above, stage of development and relevant information from different informants that contribute to the different contexts. The CBCL/4-18 and related instruments (Achenbach, 1991) provide an assessment system in which information obtained from different informants, including parents, teachers and self-reports, can either be use separately, or combined, to obtain standardised descriptions of a child's competencies and problem behaviour across social contexts.

Chapter 2

THE CHILD BEHAVIOURAL CHECKLIST (CBCL/4-18) AND RELATED INSTRUMENTS (YSR, TRF)

The CBCL/4-18 (Appendix X) is an empirically based, standardised assessment instrument designed to obtain and quantify descriptions of children's competencies and behavioural/emotional problems as observed by a parent or guardian (Achenbach & Edelbrock, 1783; Crijnen, Achenbach, & Verhulst, 1997). The CBCL/4-18 is part of a family of broad, multi-informant assessment instruments including (a) the preschool version CBCL/2-3, (b) the Direct Observation Form (DOF), (c) the Semistructured Clinical Interview for Children (SCIC), (d) the Youth Self-Report (YSR), and (e) the Teacher Report Form (TRF). The CBCL/4-18 formed the basis for the YSR and Teachers Report forms. The different instruments can be used separately to provide information from a parent, teacher, or a self-report, or in combination when any two or three reports are available, to obtain coordinated data from multiple sources.

This chapter provides brief information on the development of the Child Behaviour Checklist, followed by a discussion of the CBCL/4-18, the YSR and the TRF. Validity and reliability information for the three instruments is provided. The list of relevant research included is by no means comprehensive, but serves as an example to show the extent and continuousness of the multicultural research undertaken over the years. The chapter concludes with a discussion of a recent 12-culture project (Crijnin, Achenbach, & Verhulst, 1997, 1999) and a comparison of these results with results of earlier research between Dutch and U.S., and Australian and U.S. samples respectively. Using these comparisons, gains of multicultural research are highlighted, and possible losses resulting from combining information from multiple diverse populations are considered.

Development

The development of the Child Behaviour Checklist started with obtaining descriptions of child and adolescent problem behaviours and social competence from the clinical and research literature and in consultation with mental health workers. These descriptions were used to construct standardised procedures, but a non-clinical sample was used to derive normative data.

Principal component analyses of the data collected from clinically referred children were used to construct core - and cross-informant syndromes. The 1983 clinical samples included a total of 2,300 children, obtained from 42 mental health services that used the CBCL as part of their intake procedure, from mainly the eastern United States. The overall racial distribution was 81.2% white, 17.1% black, and 1.8% other (Achenbach & Edelbrock, 1983). The 1983 standardisation sample was randomly selected, using U.S. census tract data on socio-economic, race and age distributions, to obtain a sample similar on socio-economic and racial distribution to the clinical sample. Of the 1,752 parents reached, interviews were complete with 1,442 parents (82.3%). A total of 1,300 participants were included in the normative sample.

The CBCL was originally designed to assess young people aged 4 – 16 years. Separate norms were constructed for each gender at ages 4 – 11 and 12 – 16 on the CBCL, 11 - 16 on the YSR and 5 – 11 and 12 –16 on the TRF, because they mark important transitions in cognitive, physical, educational, and/or social-emotional development (Achenbach & Edelbrock, 1983).

The 1991 revision of the CBCL/4-18 included new national norms through to the age of 18, and provided for the coordination of data from self -, parent - and teacher-reports. Normative data for the competence and problem scales were collected in 1986 to 1989. The normative sample was constructed from these completed assessments, excluding 4 – 18 years olds who had received mental health services or special remedial school classes in the preceding 12 months (Achenbach, 1991b).

The syndrome profiles were constructed using CBCL/4-18 data from 4,445 participants seen in 52 community, hospital, private, military and university mental health settings located throughout the eastern, midwestern and southern United

States. Ethnic distribution across the six gender/age clinical groups was 89.2% white, 8.7% black, and 2.2% other. The number of participants per age group for the 1991 revision can be seen in Table 2.1.

Achenbach (1991) suggests five potential sources of information that can be included in an assessment, depending on the age of the child and the reason for the referral. These include parent reports, teacher reports, cognitive assessment, physical assessment and direct assessment of the child. Direct assessment can be done through observation of the child in his/her natural setting, the clinical interview and the use of structured self-reports. Inclusion of a particular source would depend on the relevance of the source as by dictated the referral question. For most children, parent and teacher reports, and self-reports if the child is old enough to complete this, are relevant.

Parents are the most available and knowledgeable source of information about their children's behaviour across time and situations, and are involved in their evaluation and treatment. Parental reports, therefore, formed the cornerstone and starting point of the CBCL assessment system (Achenbach & Edelbrock, 1983).

Table 2.1

Age Distribution and Sample Size of the 1991 CBCL, YSR and TRF Scales (Achenbach, 1991b, c, d, 1999).

	Boys		*Girls*		*Total*
CBCL/4-18					
Age	4 – 11	12 – 18	4 – 11	12 – 18	
Referred	582	450	619	459	2,110[1]
Non-Referred	581	564	619	604	2,368
YSR					
Age	11 – 18		11 – 18		
Referred	709		563		1,272
Non referred	637		678		1,315
TRF					
Age	5 – 11	12 – 18	5 – 11	12 – 18	
Referred	334	259	379	303	1,275[2]
Non-referred	334	309	379	369	1,391

[1] Achenbach (1999) reported a sample of 4,445 referred children from 52 mental health services. The sample size in Table 2.1 represent only the portion of the total sample reported in Appendix B (Means Scales Scores for Matched Referred and Nonreferred Boys and Girls) of the manual for the CBCL/4-18 (Achenbach 1991b).

[2] Achenbach (1999) reported a sample of 2,815 referred children from 58 mental health and special education services. The sample size in Table 2.1 represent only the portion of the total sample reported in Appendix B (Means Scales Scores for Matched Referred and Nonreferred Boys and Girls) of the manual for the TRF (Achenbach 1991c).

Core Syndrome and Cross-informant Syndromes

The CBCL syndromes are empirically derived, and are based on repeated and comprehensive analyses of parent ratings of children's behaviours. The checklists are part of an effort to create an empirical taxonomy of behavioural disturbance in children, and the profiles represent combinations of syndromes that occur at greater than chance levels. The term syndrome describes behaviour features that tend to occur together, and does not imply any assumptions about the aetiology or diagnosis of disorders (Achenbach, 1991, 1999). The CBCL/4-18 and related instruments identify eight narrow band and two broad band syndrome scales (See Table 2.2).

Table 2.2

Two Broad-band and Eight Narrow-band Syndrome Scales of the 1991 CBCL, YSR and TRF (Achenbach, 1991; Achenbach & Edelbrock, 1983).

Internalising	*Neither internalising nor externalising*	*Externalising*
Withdrawn	Social Problems	Delinquent Behaviour
Somatic Complaints	Thought Problems	Aggressive Behaviour
Anxious/Depressed	Attention Problems	

To identify core syndromes on each instrument specific to each gender and age group, correlations were computed among items scored by referred participants. Eight syndromes of problems that tend to occur were identified through performing principal component/varimax analyses on the correlations among problems.

Cross-informant syndrome constructs consist of 89 shared problem items that are common to the core syndromes derived from each of the three instruments. Principal component/varimax analysis of only these items common was used to derive cross-informant syndromes. This greatly facilitates the interpretation of information across informants.

Cross-cultural epidemiological research

Bird (1996, cited in Crijnen, Achenbach, & Verhulst, 1997) notes that cross-cultural epidemiological research can be approached in two ways. In the first approach, diagnoses are based on the DSM-IV (American Psychiatric Association, 1994) or the World Health Organisation's (1992) International Classification of Diseases (ICD-10). In the second approach, empirically based, standardised assessment instruments are used to quantify informants' reports of behaviour and emotional problems. Bird points out that methodological inconsistencies in the diagnostic approach can cause major variations in diagnostic systems and criteria, assessment procedures, and data collection and aggregation, while the empirical approach can lead to direct comparison of problem scores across studies and cultures in a more standardised fashion.

Brown and Achenbach (1996) supporting Brown's views, report that the CBCL and related instruments have been translated into 51 languages, findings form 36 cultures and cross-cultural comparisons between many pairs of cultures have been published, and integration of multicultural data is providing a cross-cultural robust methodology (cited in Crijnen, Achenbach, & Verhulst, 1997).

The Child Behaviour Checklist/4-18

The CBCL/4-18 was designed to obtain parents' descriptions of children's behaviour in a standardised format, for the ages 4 to 18. Problem behaviours are rated on a three-point response scale where 0 indicates that the item is not true, 1 that the item is somewhat or sometimes true and 2 that the item is very or often true. Competencies are rated on number, frequency and quality of participation in activities, the child's interaction with others, and school performance.

Description of the CBCL/4-18

The four-page CBCL form is used to obtain descriptions of competencies and behavioural/emotional problems as observed by parents or caregivers over the last six months. It consists of 20 competence and 118 problem items. The form can be

completed by people with fifth grade (year 7) reading skills, and takes between 10 and 17 minutes to complete (Achenbach, 1991a,b).

Competence Scales.

The competence items of the CBCL/4-18 aim to discriminate between children who are well adjusted (adapting successfully) and those who need help for emotional and/or behavioural problems. Competencies are reported as the number of activities the child engages in, and the amount and quality of involvement. The presence of competencies are important when determining what is needed to help a child, as it may facilitate treatment and improve chances for positive outcomes (Achenbach, 1991a,b, 1994, 1999).

The CBCL competence profile consists of three scales, including:

1. Activities, describing the number of sporting activities, jobs and chores the child takes part in, and the amount and quality of participation;
2. Social, describing participation in organisations, number and contacts with close friends, interaction with siblings, parents and friends and how well the child can play and work alone; and
3. School, which reports on performance in academic subjects, the child's placement in a remedial or mainstream class, grade repetition and any other school problems (Achenbach, 1991a,b; Fombonne, 1989).

The activities and social scales are scored on a 3-point scale: 0/1 activity = 0; 2 activities = 1 and 3+ activities = 2. Amount and quantity of participation are also scored on a 3-point scale, with less/below average = 0; average = 1 and more/above average = 2. Scale scores are calculated by adding the item scores on each scale. The graphic display of the scores on the CBCL Profile - Competence Scale form provides percentile ranking to the left of the profile, and T scores to the right, for each age group and gender. T scores are similar for all scales and facilitate comparison between the different scales and instruments. The display enables the user to compare the child's raw score, obtained on each of the competence scales, with percentiles of the normative sample for the child's age and gender. T scores from 30 – 33 are within the borderline clinical range and T scores

below 30 falls within the clinical range, indicating evidence of poor functioning on any of the competence scales, compared to a normative sample of peers.

A total competence score is obtained by summing the total raw scores of the 3 scales. A Total Competence T score below 37 is considered to be in the clinical range, while 37 – 40 are within the borderline clinical range.

Problem Scales.

The problem scales consist of 118 items assessing a broad range of behavioural and emotional problems that are observable by parents. Problem items are rated on a 3-step response scale (0 = not true, 1 = somewhat/sometimes true, and 2 = very/often true) for current behaviour, or behaviour observed over the last six months. The score range is between the theoretical limits of 0 and 240. The problem behaviours are scored on two broad band (Externalising and Internalising) and eight narrow-band (Withdrawn, Somatic complaints, Anxious/Depressed, Social, Thought, Attention, Aggressive and Delinquent behaviour problems) scales, as indicated in Table 2.2. The Social, Though and Attention Problems syndrome scales do not contribute to either the Internalising or Externalising groups across the CBCL, YSR and TRF.

A problem profile is obtained when the raw scores of each scale are marked in the appropriate column for the child's age, and connected across the scales. Percentile rankings, based on non-referred children, can be read on the left, and T scores on the right, of the graphic display. As on the Competence Profile, borderline and clinical ranges are indicated on the problem profile, using broken lines. A T score from 67 to 70 represent the borderline clinical range, while a T score greater than 70 more clearly indicate behaviour in the clinical range. As the scales are not intended as a diagnosis, a child's score on a syndrome scale should be interpreted "as an approximation of the child's status as seen by a particular informant" at the time of completion of the CBCL (Achenbach, 1991, p. 56). The CBCL is designed to identify syndromes that indicate problems that tend to occur together, but are not a model for the nature or causes of disorders (Achenbach, 1991).

An Externalising, Internalising and Total problem T score can be calculated by adding the raw scores obtained on the syndrome profiles, excluding question 2 (allergy) and question 4 (asthma). The equivalent T score can be read from the table provided on the problem profile form. Although the externalising and internalising behaviours represent opposing behaviours, they are not mutually exclusive and children frequently display behaviours from both scales.

Reliability and Validity

Detailed reliability and validity information is available in manuals for the CBCL/4-18, YSR and TRF (Achenbach, 1991a, b, c, d, 1994, 1999). Table 2.3 summarises the reported reliabilities and validities.

Table 2.3

Reliability and Validity Data for the 1991 CBCL, YSR and TRF. (Summarised from Achenbach, 1991a, b, c, d)

Instrument	*Reliability*	*Validity*
CBCL/4-18	*Inter-interviewer reliability* .927 for 20 competence items .959 for 118 problem items *Test-retest Reliability*[a]: .87 (mean for competence scales) .89 (mean for problem scales) *Interparent agreement*: Competence scales: .74 - .76[b] Problems scales: .65 - .75[c]	*Content validity*: All scales discriminate between matched referred and nonreferred children at $p <$ .01. *Construct validity*: Significant Pearsons r's ($p < .0001$) between: 1. CCBCL and Connors (1973) Parent Questionnaire[d] Total problem scale scores collation = .82 2. CBCL and Quay-Peterson (1983) Revised Behavioural Problem Checklist[e] Total problem scale score correlation = .81 *3.* Confirmatory factor analysis (Dedrick et al., 1997)
YSR	*Test retest reliability* (N=50)[h] Competence scales: Ages 11-14: mean r's = .68 Ages 15-18: mean r's = .82 Problem scales: Ages 11-14: mean r's = .65 Ages 15-18: mean r's = .83 Total competence score: Ages 11-14: r = .69 Ages 15-18: r = .87 Total problem score: Ages 11-14: r = .70 Ages 15-18: r = .91 Ages 15-18: r = .91	*Content validity*: All scales discriminate between matched referred and nonreferred children at $p < .01$.

Table continues

Instrument	*Reliability*	*Validity*
TRF	*Inter-teacher agreement (referred children)*[f] .55 (academic and adaptive scores) .54 (problem scores) *Test-retest Reliability*[g] .90 (mean for adaptive scales) .92 (mean for problem scales)	*Content validity*: All scales discriminate between matched referred and nonreferred children at $p <$ .01. *Construct validity*: Significant Pearsons r's ($p < .0001$. Between CBCL and Connors Revised Teacher Rating Scale (Goyette, Conners, & Ulrich, 1978, cited in Achenbach, 1991)

Note: Correlations are Pearsons r's between raw scores

[a]Mother's ratings taken at a mean interval of 7 days; all Pearsons r's were significant at $p <.001$.

[b] Mean r's for the four sex/age groups (competence scales exclude 4-5-year children).

[c] Mean r's differ across age/sex groups.

[a,b, c,g] All r's significant at $p <.01$.

[d] Correlations are between CBCL and Connors scales that are most similar in content.

[e] Correlations are between CBCL and Quay-Peterson scales that are most similar in content.

[d,e] All r's significant at $p < .0001$.

[f] All r's significant at $p < .05$.

[g] Teachers completed TRFs at a mean interval of 15 days; r's significant and $p< .05$

[h] Pearson r's significant at $p < .05$; ratings taken at a mean interval of 7 days.

Youth Self Report

The YSR (Appendix XI) was designed to obtain adolescents reports about their own competencies and problems, across the ages 11 to 18. The format is the same as the CBCL/4-18, except that it is worded in the first person. The suggested completion time for the YSR form is at least 15 minutes (Achenbach, 1991b). Ratings for competencies and problem behaviours are again described for the last six months.

Normative data for the YSR were drawn form a subset of participants in a nation sample assessed with the CBCL/4-18 in a home interview survey during 1989 (Achenbach, 1991d) and included 1,315 non-referred children across the ages 11 to 18 years. The clinical sample included 1,272 referred boys and girls, seen in 26 settings, including university child psychiatric clinics, guidance clinics, community mental health centres, private practices and in-patient services.

Competence Scale.

The competence items of the Youth Self-Report Form parallel those of the CBCL, but exclude questions about grade repetition, special class placement and school problems, that may cause embarrassment to the student. Scoring is similar to the CBCL/4-18. Although there is no separate profile for school functioning, the mean score obtained for performance in academic subjects is added to the Activities and Social scales to obtain a total competence score.

A competence profile can be graphically displayed when the raw scores of the Activities and Social scales are marked on the YSR profile form. Percentile rankings and T-scores are displayed to the left and right of the competence profile and allow comparison with same aged peers. A total competence score is obtained by adding the Activities and Social scales, and the mean ratings score on academic subjects' performance. The obtained Total Competence T score can be read of the table provided to the right of the graphic display. Broken lines on the graphic display indicate borderline (37 – 40) and clinical range (<37) T scores.

Problem Scale

The problem items of the YSR are similar to those on the CBCL/4-18, except for 16 items that have been replaced with socially desirable items that most adolescents endorse, but are not scored on the profile. Behaviour over the last six months is rated and scored in the same way as the CBCL/4-18.

A problem profile can be graphically displayed, and externalising, internalising and total problem scores calculated. The eight core syndromes for the YSR Problem Profile and CBCL/4-18 (Table 4.2) are the same, and allow for comparison of self-report information, with those obtained from parents and/or teachers. An additional syndrome called Self-destructive/ Identity Problems was identified only for boys on the YSR, and has no counterpart on either the CBCL or TRF (Achenbach & Edelbrock, 1987). Percentile ranking and T scores are displayed on the profile form, and borderline (67 – 70) and clinical ranges (< 37) T scores are again indicated by broken lines.

Teachers Report Form

Teachers who have known a student for at least two months in the school setting complete the TRF (Appendix XII; Achenbach, 1991c; Achenbach & Edelbrock, 1986). With the TRF, like the CBCL/4-18 and YSR, descriptions of behaviour, rather than a diagnosis, is obtained (Achenbach & Edelbrock, 1986). Integrating the data obtained from the TRF with other sources provide a more comprehensive assessment of the child.

The TRF consists of items to obtain descriptions of school performance, adaptive functioning, and emotional and behaviour problems as observed by the teacher. It takes approximately 10 minutes to complete the report, but if extensive comments are included, it can take longer (Achenbach, 1991).

The 1986 version of the TRF included norms for 6 – 16 year old students, obtained for 1,100 students in regular classrooms, selected randomly. The 1991 profiles include normative data for 1,391 5 – 18 year old students who attend school. The ethnic distribution includes 76% white, 14% black, 7% Hispanic and 3% other (Achenbach, 1991).

Competence Scale.

The teacher rates the child's current school performance in academic subjects and adaptive functioning against the performance of typical students of the same age. Ratings include how hard the child works, appropriateness of behaviour, how much he/she is learning, and how happy he/she is.

The competence scales of the TRF is not intended to parallel the scales of the CBCL or YSR, except for academic performance which is present on all three instruments. The competence scale consist of the following scales:

1. Academic Performance: Performance is rated on a 5-point scale, ranging form "far below grade" to "far above grade";
2. Adaptive characteristics: The four scales include working hard, behaving appropriately, learning and happy. Adaptive functioning is scored on a 7-point scale. The total of each of the four adaptive scales is summed to provide a total score for Adaptive Functioning.

The TRF profile looks similar to the CBCL profile, indicating percentiles of the normative sample to the left, and T scores to the right of the profile. A borderline range between T scores of 37 and 40, and clinical range below 37 is in indicated by broken lines.

Problem Scale

Only problem items specific to behaviour in the school context are included in the TRF. In the 1991 revision, syndrome scales derived from the problem items of the TRF were changed to match those of the CBCL/4-18 and YSR, to improve information integration from the different informants (cross-informant syndromes – see table 2.2) (Achenbach, 1991c).

A TRF problem profile similar to the CBCL profile is obtained when scoring and marking the syndrome scales on the profile form, with broken lines indicating behaviour in the normal, borderline clinical (T = 67 – 70) or clinical (T > 70) ranges. An Externalising, Internalising and Total problem T score can also be calculated by adding the raw scores obtained on the syndrome profiles, excluding question 2 (allergy) and question 4 (asthma).

Research with the CBCL

The CBCL and related instruments are well researched and used in many different cultures (Achenbach, 1991; Bond, Nolan, Adler, & Robertson, 1994; Crinjen, Achenbach, & Verhulst, 1997, 1999; Oesterheld & Haber, 1997). Table 4.5 provides information on some of the available studies.

Achenbach (1991) emphasises the importance of multicultural research in the gathering and comparing of data in an empirically based taxonomy. In the following section, recent research findings involving 12 cultures (Crijnen, Achenbach, & Verhulst, 1997, 1999) are discussed. The findings of the 12 culture study is compared with research findings obtained in two independent studies involving only two cultures, the U.S. and the Dutch (Achenbach, Verhulst, Baron, & Akkerhuis, 1987) and the U.S. and Australia (Achenbach, Hensley, Phares, & Greyson, 1990).

Crijnen, Achenbach, and Verhulst (1997, 1999) reported research results obtained form 12 cultures (See table 2.5). An omnicultural mean calculated for the Externalising, Internalising and Total Problems scales for age groups 6 – 17 and 6 – 11 enabled the researchers to compare intercultural differences in reported problem behaviours as observed by parents. Cross cultural similarities in the 12 culture research that support the robustness of an empirically based methodology include: Total Problem scores obtained in the six to 11 year age group were significant higher than those obtained at ages 15 to 17 years; Externalising scores decreased significantly from ages 6 – 8 to 15 – 17 years, while internalising scores increased significantly from ages 6 – 8 to 12 – 14 years; and, across all cultures, boys obtained higher externalising scores and girls higher internalising scores. In both groups, Puerto Rican youth showed the largest deviation above, and Swedish youth the largest deviation below the omnicultural mean on the Total Problem scales. Internalising and externalising scores followed the same pattern: cultures that deviated most on the Total Problem scale also deviated most on the Internalising and Externalising scales. Crijnen, Achenbach, and Verhulst (1999) also tested the variance in scores obtained on the eight core syndromes across 12 cultures to identify cultures that deviate significantly from the omnicultural mean.

Swedish youth scored consistently below each syndrome mean, while Puerto Rican youth scored above the omnicultural mean on each syndrome.

It is of interest to note the difference between the U.S. and Dutch scores reported in the Crijnen, Achenbach, and Verhulst (1999) study, compared with research results reported by Achenbach, Verhulst, Baron, and Akkerhuis (1987). U.S. scores were above the omnicultural mean on six syndromes, at the mean on one, and below the mean on one, while the Dutch sample scored below the omnicultural mean on five syndromes, at the mean on two and above the mean on one. Results obtained by Achenbach, Verhulst, Baron, and Akkerhuis (1987) showed no national differences between the internalising and externalising scales for the two cultures, and a non-significant difference on the mean total problem scores. The results obtained by Achenbach, Hensley, Phares, and Greyson (1990) when they compared problems and competencies as reported by Australian and American parents show a similar pattern. Australian youth scored significantly higher on the mean total problem score compared to American youth (31.6 versus 20.1) and there was no difference between the proportion of internalising and externalising items scored. In the 12 culture research (Crijnen, Achenbach, & Verhulst, 1997), Australian youth scored below the omnicultural total problem mean, while the American total problem mean equalled the onmicultural mean (19.0 versus 2.4). Both internalising and externalising mean scores were lower than the onmicultural mean for the Australian sample, while the American sample scored at the mean for both scales.

Other researchers have brought into question the normative findings of the nonclinical standardisation sample. For example, Sandberg, Meyer-Bahlburg, and Yager (1991) found that the mean Total Behaviour Problem scores for 6 – 10 year old children, obtained from a community sample of 530 parents who completed the CBCL/4-18, were dramatically higher than the norm group. There were also significant race-ethnicity effects in their male subsample. These results raise doubts about the appropriateness of using the CBCL/4-18 norms as a yardstick for sample comparisons. They note that it might be critical to establishing local norms

within a community when using the CBCL/4-18 for widespread research and outcome-based studies, particularly with diverse populations.

It seems that, although multicultural research can indeed inform and support an empirically based taxonomy, care should be taken that intercultural differences not are obscured or distorted when vastly different cultures are compared.

Heubeck (2000) looked at how well the 8-factor cross-informant model of the CBCL as reported by Achenbach (1991) fits clinic data obtain in the U.S., Holland and Australia. Although he found that about 90% of the items showed convergent validity, and that six of the eight scales measure the factors they were designed to measure, thus supporting Achenbach's model across counties, he also reported on important differences. The six scales that can independently be used with confidence according to Heubeck include the withdrawn, somatic complaints, anxious/depressed, thought, and delinquent and aggressive behaviour problems scales. The factor structure of the attention - and social problem scales were not supported. For the attention problems scale, Heubeck suggests following DSM-IV (APA, 1994) guidelines when assessing inattention and hyperactivity, recognising the two dimensions related to the Attention Deficit Hyperactivity category. Confirmatory analysis of the Social Problems scale showed the least support for Achenbach's original factors. Heubeck suggests that a shift occurred in behaviours measured by the original scale and redefines the social problem factor, including items supported in the Dutch and Australian samples. Originally, the social problem scale described an immature and clumsy child that did not get along with his/her peers. The new factor describes a child that, even though peers still may reject him, is mean, destructive, antisocial, and probably a bully. Frick and Kamphaus (2001) raised similar concerns and noted that CBCL items were originally developed in the 1970's. They suggested that some of the content may not match the current conceptualisation of childhood psychopathology and included examples such as the single scales combining anxious with depressive behaviours, and the scale combining overactivity with attentional problems.

Sociocultural influences affect behaviour. Cultural definitions of normal behaviour differ when compared to other cultures. It is realistic to consider that behaviour, or our acceptance or tolerance for particular behaviours, might change when we are exposed to more diverse cultures. This change is either the behaviour itself, or our acceptance thereof, needs to be reflected in assessment instruments. When normative data is revised, care is taken of concerns about altered acceptance or tolerance of behaviour. The question is then about validity. Is the CBCL/4-18 and related instruments still measuring what they purport to measure, or is it perhaps time to look at the item content to make sure that we are indeed assessing what we set out to do.

Table 2.4

International research

Study	*Sample & Culture (N)*	*Age (years)*	*Instrument*
Achenbach, Verhulst, Dana Baron, & Akkerhuis (1987)	1,300 non-referred American 2,033 non-referred Dutch	4 – 16	CBCL
Hensley (1988)	1,300 non-referred Australian (Sydney)	4 – 16	CBCL
Verhulst, Achenbach, & Akkerhuis (1989)	1,300 referred American & Dutch	4 – 16	CBCL
Fombonne (1989)	127 referred French (Paris)	6 - 11	CBCL
Achenbach et al. (1990)	724 non-referred American & Puerto Rican	4 – 16	CBCL, YSR, TRF
Achenbach, Hensley, Phares, & Grayson (1990)	2,600 non-referred American & Australian (Sydney)	4 – 16	CBCL
Achenbach (1991)	4,445 referred & 2,368 non-referred American	4 – 18	CBCL
Verhulst, & van der Ende (1991)	132 International adoptees	14	CBCL, YSR, TRF
Sawyer, Baghurst, & Mathias (1992)	100 referred & 83 non-referred Australian (Adelaide)	10 – 11 14 – 15	CBCL, YSR, TRF
Bond, Nolan, Adler, & Robertson (1994)	1,009 non-referred Australian (Melbourne)	7, 12, 15	CBCL
Chen, Faraone, Biederman,, & Tsuang (1994)	121 children with and without ADHD	6 – 18	CBCL
De Groot, Koot, & Verhulst (1994)	4,674 referred Dutch	4 – 18	CBCL

Table continues

Study	*Sample Size (N) & Culture*	*Age*	*Instrument*
Frankel, & Myatt (1994)	93 clinic referred U.S. (California)	7 – 11	CBCL
Biederman et al., (1995)	31 children with mania 120 with ADHD 77 control (U.S.)	≤12	CBCL
Carter, Grigorenko, & Pauls (1995)	105 non-referred Russian (Voronezh)	9, 10	CBCL, TRF
Chang, Morrisey, & Koplewicz (1995)	181 Chinese-American	5 – 17	CBCL
MacDonald, Tsiantis, Achenbach, & Motti-Stefanidi (1995)	356 non-referred Greek & American	6 – 11	CBCL
Weine, Phillips, & Achenbach (1995)	469 Chinese & American	6 – 13	CBCL, TRF
Biederman, Faraone, Mick, Moore, Lelon (1996)	94 children with MDD, 97 children with ADHD, 115 control (U.S.)	6 – 13	CBCL
Belter, Foster & Imm (1996)	188 referred U.S.	4 - 18	YSR
De Groot, Koot, & Verhulst (1996)	1,139 referred Dutch 2,442 referred Dutch	11 – 18 5 – 18	YSR TRF
Harris, Canning & Kelleher (1996)	116 chronically ill, non referred children	9 - 18	CBCL
Oesterheld & Haber (1997)	33 parents (focus group)	-	CBCL
Dedrick, Greenbaum, Friedman, & Wetherington (1997)	631 referred American	8 - 18	CBCL
Lambert, Lyubansky, & Achenbach (1998)	365 Jamaican & American	12 – 18	CBCL, YSR, TRF

Table Continues

Study	*Sample Size (N) & Culture*	*Age*	*Instrument*
Crijnen, Achenbach, & Verhulst (1997, 1999)	13,697 non-referred Australian Chinese German Greek Israeli Jamaican Dutch Puerto Rican Swedish Thai American	6 – 17	CBCL
Goodman & Scott (1999)	71 non referred & 61 referred English (UK)	4 – 7	CBCL
Heubeck (2000)	2,731 referred American 2,335 referred Dutch 2,237 referred Australian (New South Wales country regions & Sydney)	4 – 18	CBCL

Chapter 3

TRAUMATIC BRAIN INJURY

This chapter provides information on the incidence, risk factors, and neuropathology of Traumatic Brain Injury, followed by the definition and classification of measures of severity and injury outcome. Aspects of TBI specific to children are discussed throughout the section, including concerns about assessment measures, and age of injury. Lastly, we look at the impact of TBI on cognitive, emotional and social development and functioning.

Epidemiology: Incidence and Risk Factors

Although TBI occurs frequently, it is difficult to determine the exact prevalence as mild injury, accidental or inflicted, may not be reported. It is mostly those who suffer more severe injury who seek medical attention or gain hospital admission (Segalowitz & Brown, 1991; Annegers, Grabow, Kurkland, & Laws, 1980; Kraus, Fife, Cox, Ramstein, & Conroy, 1986). Reported international incident rates for TBI vary greatly. The U.S. National Institute of Health (1999) stated that an estimated 1.5 to two million people incurs a TBI each year, while Wade, Taylor, Drotar, Stancin, and Yeates (1997) notes that in the U.S., more than 100,000 children are hospitalised yearly for TBI. Hoofien, Gilboa, Vakils and Donovick (2000) reported a yearly incidence of 1 per 2000 traumatic brain injuries in industrialised countries, while Sosin et al. (1996, cited in NZ National Advisory Committee on Health and Disability & ACC, 1998) reported yearly injury rates of 618 per 100,000 in the U.S.

In the year 2000, 12,953 (8,534 in 1998/9) individuals in New Zealand were diagnosed with, and treated for, a brain injury. The cost of new brain injury (concussion) for the year 2000 was $3,860,000 while the ongoing cost of brain injury from previous years was $13,296,000 concussion (Accident Rehabilitation and Compensation Insurance Corporation, 2000).

Approximately 40% of all TBI patients are younger than the age of 18 years. The peak ages for TBI are between 15 and 24 years, but incidence rates for children up to the age 5 years, and the elderly, are also high (Naugle, 1990). Males outnumber females approximately 2:1, depending on the age (Bigler, 1990; Mira, 1992). Segalowitz and Brown (1991) reported the greatest gender difference to occur at age 7 – 8 years, when boys outnumber girls 3:1. Kraus and Nourjah (1989) reported a similar ratio for ages 15 – 19 years. In New Zealand, males aged 15 to 30 make up the largest group, followed by children younger than 15 years (NZ National Advisory Committee on Health and Disability & ACC, 1998). Falls tend to be the most common cause of head injury in the young and the elderly, while motor vehicle accidents account for almost half of all head injuries in the other age groups. Risk factors for head injury resulting from falls and assaults include low socio-economic status, unemployment, and lower education levels (Naugle, 1990). Other causes of head trauma include assault, sports, recreational activities, and workplace accidents

Traumatic brain injury is associated with neuropsychological deficits and emotional behavioural problems that impact not only on the lives of the patient, but also on the lives of those around them.

Neuropathology of Traumatic Brain Injury

Knowledge of the neuropathology and pathophysiology of the brain insult increases our understanding of the cognitive and behavioural effects of TBI, as these often relate directly to the site of injury (Bigler, 1990).

Most TBI are closed, with the skull remaining intact and the brain not exposed. Open head injuries include all injuries in which the skull is penetrated. The effects of TBI depend of a number of factors, including severity, site of lesion, type of injury, age, and premorbid personality. Injury effects can range from a mild bump that leaves no behavioural traces, to injury so severe as to leave the patient in a prolonged coma or vegetative state, or even cause death.

The neuropsychological outcomes of brain injury differ for closed and open head injuries. Focal effects are often more pronounced with open head

injuries, while diffuse effects may be experienced with closed head injuries, due to angular or rotational acceleration and deceleration as well contact forces to the brain (Bigler, 1990; Halliday, 1999; Penrod, 1999). The severity of the injury sustained depends on the magnitude, duration, onset, and rate of the acceleration experienced during the insult. Outcome is dependent on the severity and location of the injury. The effects of diffuse axonal damage may be widespread throughout the brain, and lesions frequently occur in the white matter and brain stem areas (Bigler, 1990). The effects of diffuse damage include changes in emotional and intellectual functioning, impairment of memory, attentional and concentration functions, and mental slowing. In instances of severe injury, high-level concept formation and complex reasoning abilities can also be affected. Patients may complain about their inability to concentrate, confusion, irritability, fatigue, and not being able to do things as well as before the accident. This is particularly true for mildly injured patients of higher cognitive ability, who may still perform well on standardised tests, but realise that they are no longer able to function at previously attained levels (Bigler, 1990; Lezak, 1995).

A single incident of TBI doubles the risk for future injury, and two such injuries raise the risk for future injury eight-fold (Gaultieri & Cox, 1991; Gronwall & Wrightson, 1975). The effects of recurrent TBI are cumulative, resulting in a progressive deterioration in cognitive functioning, even when no loss of consciousness is experienced (Gronwall, 1989, 1991; Salcido, 1992; Salcido & Costich, 1992). This has implications for children at risk of suffering mild, accidental injury, caused by impulsive, aggressive and attention seeking behaviours.

Severity of TBI can be estimated using different measures, including depth of coma, length of posttraumatic amnesia, duration of loss of consciousness, and/or neuro-radiological findings, the presence of neurologic abnormalities, or the degree to which the intracranial pressure is elevated.

Measuring the Severity of TBI

The classification systems used to assess the severity of TBI frequently use an altered state of conscious to indicate severity and predict outcomes. Brain injury is generally classified as mild, moderate, or severe, based on either the Glasgow Coma Scale score (Teasdale & Jennett, 1974), duration of posttraumatic amnesia (Bigler, 1990), or duration of loss of consciousness (Annegers et al., 1980; Teasdale & Jennett, 1971). Additional diagnostic measures include the presence of neurologic abnormalities and the use of neuroradiological procedures. It is important to note, though, that impaired consciousness is the result of diffuse damage, and it is possible to experience local damage without any change in the level of consciousness (Bigler, 1990; Jennett, 1989; Snoek, 1989).

The Glasgow Coma Scale (GCS)

The GCS, developed by Teasdale and Jennett (1974), is used to assess the depth and duration of impaired consciousness or coma following injury. The GCS describes the neurological status of a patient with TBI by providing a quantitative measure of eye opening, motor and verbal responses, independently of each other. The possible total score ranges from 3 - 15, with coma defined as a motor response less than 5 or a total score less than 8. A maximum score of 15 indicates a spontaneous eye opening response, the ability to follow simple commands, and normal orientation to time, place and person. Mild, moderate and severe TBI is defined by a GCS of 12 – 15, 9 – 12 and 3 – 8 respectively (Prigatano, 1992). The extent of the neurologic injury experienced can be obtained from a brief summary of the GCS and pupillary function at time of hospital admission.

Although the GCS does not predict outcome, it does describe the initial severity of injury and provides a context for assessing subsequent changes in the neurologic status of the patient (Valadka & Pepe, 1999). Schoenhuber and Gentilini (1989) reported the GCS to be a sensitive measure of injury severity in moderate and severe trauma, which predicts final outcome reliably in these patients. Penrod (1999) notes that a range of likely outcomes can be predicted for

individual patients depending of severity of injury, as indicated by GCS score, pupillary abnormalities, CT-defined intracranial injury, and the patient's age.

Concerns have been raised about assessing young children with the GCS. These include the difficulty involved with assessing the actual content of consciousness in fearful and restless children in the emergency room setting (Snoek, 1989) and the limitations imposed when children are to young to answer questions or obey commands (Valadka & Pepe, 1999). Valadka and Pepe (1999) suggested the use of a modified version of the GCS with very young children.

Posttraumatic amnesia (PTA)

PTA refers to the time between the injury and when consistent memory for day-to-day events is reliably regained (anterograde amnesia), and takes into consideration the deficits in retaining new information and processing new memories (Bigler, 1990; Bigler, & Clement, 1997; Morse, & Montgomery, 1992). It is often accompanied by retrograde amnesia. Research indicates that the duration of PTA tends to correlate with injury severity, and that longer periods of PTA (in excess of one week) are associated with poorer outcome, more persistent cognitive dysfunction and some degree of permanent impairment (Lezak, 1995; Wilson, Teasdale, Hadley, & Wiedmann, 1994). The specificity of PTA ratings is limited, though, as PTA times between 5 minutes and 1 hour (mild injury) has been associated with significant injury (Jennett, 1986).

Loss of Consciousness (LOC)

Victims of TBI may experience an immediate loss of consciousness, changes in cardiopulmonary functioning, and suppression of reflexes at the moment of impact. The patient may remain unconscious even when vital signs return to normal. The length of LOC time can be used as an indication of injury severity, with extended LOC times usually being indicative of more severe head injury (Lucas, 1999; Morse & Montgomery, 1992).

Classifying TBI Severity: Mild, Moderate and Severe Brain Injury

The definition and classification of TBI is complicated, due to the complexity of brain function as it relates to human behaviour, as well as the multiple ways in which the brain can be damaged or injured. Brain injury can be defined in terms of the conditions that describe it, including concussion, contusion, haemorrhage, laceration or whiplash, or in terms of the severity of injury, as based on measures such as the GCS, LOC and PTA. By using any or a combination of assessment measures, the severity of TBI classified can be classified mild, moderate or severe (Table 3.1).

Table 3.1

Severity Classification of TBI, using GCS Score, PTA Time, and Length of LOC.

Injury Severity	GCS Score[1]	PTA Time[2]	Length of LOC[3]
Mild	13 – 15	5 – 60 minutes	1 – 30 (60) minutes[4]
Moderate	9 – 12	1 – 24 hours	30 minutes – 24 hours
Severe	3 – 8	24+ hours	24+ hours

[1] Source: Prigatano (1992)
[2] Source: Teasdale and Jennett, 1974, cited in Lucas, 1999
[3] Source: Lucas, J, 1999
[4] Variations in the length of LOC for mild injury exist (Bigler & Clement, 1997; Mira, 1992).

Mild Brain Injury, Concussion and Post Concussion Syndrome

Bigler and Clement (1997) describe mild brain injury (often referred to as a concussion) as characterised by a transient loss of, or altered, consciousness. If a loss of consciousness is experienced, it does not last for longer than up to 60 minutes before the patient returns to previous level of consciousness. Mild head injury is sometimes also referred to as a concussion (Bigler & Clement, 1997). Both mild brain injury and concussion can be followed by posttraumatic symptoms that may be transient, or persist for weeks, or even months, depending on the injury severity although very mild brain injury has been associated with posttraumatic symptoms.

Posttraumatic symptoms that may result from mild head injury include somatic, cognitive, emotional and behavioural difficulties, such as nausea, headaches, dizziness, poor concentration and memory, and anxiety. These may resolve soon after the injury, but sometimes persist for weeks or even months. The cluster of symptoms is referred to as postconcussion syndrome.

Subtle signs of neurological damage usually resolve within the first three months post injury (Gronwall & Sampson, 1975; Gronwall & Wrightson, 1974), along with improvement in neurological test scores, although standard neuropsychological tests are often unsuccessful in detecting the behavioural changes resulting from a mild head injury or concussion (Schoenhuber & Gentilini, 1989). This may be because the changes result from a reduction in information processing capacity and lowered arousal levels, and not from localised injury (Gronwall, 1989; Gronwall & Sampson, 1974). The cumulative effects of TBI further complicate assessment, as previous injuries needs to be taken into account when assessing injury severity (Gronwall & Wrightson, 1975).

Concussion

According to the American Academy of Neurology, a concussion is a trauma-induced alteration in mental status that may or may not involve loss of consciousness (Stranjalis, 2000). It is often characterised by a brief loss of

consciousness followed by prompt recovery, without any localising neurological signs. Although experiencing a concussion does not necessarily imply the presence of brain injury, it does provide important information regarding the initial injury, as well as some predictive information regarding outcome (Bigler, 1990). Concussion is encompassed by mild head injury, but differs in the sense that there are no limits in terms of severity (Rutherford, 1989). There is evidence that the persistence and severity of symptoms and neuropsychological deficits experienced curing a concussion is not predicted by a loss of consciousness of less than 1 hour, as compared with a patient just being dazed (Stranjalis, 2000).

Postconcussion Syndrome

Postconcussion syndrome does not define mild head injury, but describes a collection of persisting symptoms that may be observed resulting from TBI. The sufferer may complain about a variety of somatic, cognitive, emotional, motor, or sensory difficulties following the insult (Benton, 1987, 1989; Binder, 1986; Gronwall & Wrightson, 1974; Miller & Jones, 1990; Mittenberg, Wittner, & Miller, 1997). Somatic complaints include headaches, fatigue, dizziness, blurred vision, noise intolerance, and light sensitivity. Cognitive difficulties experienced include subjective reports about poor concentration, memory impairment, and attentional and academic problems. The emotional changes include anxiety, depression and emotional instability, anger controlling and impulsivity problems, increased irritability, and lowered frustration tolerance.

The DSM-IV criteria for postconcussional disorder (American Psychiatric Association, 1994) were derived from mostly adult epidemiological studies (Brown & Grant, 1994), and although previous studies have indicated that behavioural symptoms are predominant in children (inattention, hyperactivity and conduct problems), the reports were based on parent, and not self-report, information. Research has shown, though, that parents report more behavioural symptoms, while children report more emotional and somatic symptoms (Achenbach & Edelbrock, 1972). Mittenberg, Wittner, and Miller, (1997) found that the symptoms of postconcussion syndrome for children are consistent with

those reported by adults, and are consistent between children, when a similar self-report assessment procedure is used, rather than using information gathered from parents. Postconcussion syndrome can occur in children following both mild and moderate-to-severe head traumas. Moderate-to-severe injuries were associated with more reported symptoms than mild injury, and both mild and moderate-to-severely injured patients reported more symptoms that children hospitalised for skeletal fractures.

The effect of these symptoms on the head-injured person can be debilitating. Because clinical examination often fails to support the subjective complaints of the patient, the patient may feel misunderstood, and be assumed to be malingering.

Moderate Brain Injury

Brain injury is considered to be moderate if consciousness was loss for more than one, but less that 24 hours. PTA following loss of consciousness may last for up to 24 hours and the patient will have only fragments of memory for events that occurred during the period of PTA (Bigler & Clement, 1997). Recover is depended on the extent of brain involvement, and whether critical systems, such as language and motor skills were affected. Posttraumatic symptoms are common after moderate brain injury.

Severe Brain Injury

In severe TBI, brain bruising and shearing damage to white matter is common (Bigler & Clement, 1997). The patient may be comatose, and can not communicate or obey simple commands. The GCS score is smaller than eight and PTA usually lasts between one and seven days. Recovery may require long-term rehabilitation, focussing on developing independent living skills, and the patient may not be able to return to previous activities.

TBI in Children: Assessment and Outcome

Satz et al. (1997), in a review of mild head injury in children and adolescents, warns about the unreliability of severity measures in children, due to the transient nature of the symptoms, and the lack of understanding that children have about head injury terms. Snoek (1989) echoes this warning, noting the difficulty involved with assessing the actual content of consciousness in fearful and restless children in the emergency room setting. Valadka & Pepe (1999) also noted this limitation, and suggest the use of a modified version of the GCS with very young children.

The outcome of TBI is often dependent on the age at which the injury was sustained. Because the very young brain (0-2 years) is still immature and poorly myelinated, it is very sensitive to trauma and outcome is often poor (Penrod, 1999; Rutter, 1981). Injuries during this stage often result from shaking and severe blunt trauma, resulting in a higher death rate than at other ages (Penrod, 1999).

Young children (2-10 years) generally recover well from motor deficits but cognitive functioning may be impaired. The injured person may never achieve complete self-reliance as the frontal lobes only become fully functional after maturation of the brain between the ages of 12 and 14 years when the developmental milestones of increased independence, ability for abstract thought, and executive functioning, are achieved. Children suffering from mild, accidental brain injury, often show pre-existing problems with impulsivity, aggression and attention seeking behaviour, which make them more susceptible to accidental injury (Klonoff, 1971; Rutter, 1981). Their families as a group show more parental illness and mental disorder, social disadvantages (socio-economic adversity), and less adequate supervision of their children. This makes it impossible to determine whether the psychological sequelae derive from pre-existing difficulties, rather than cerebral damage (Rutter, 1981; Rutter, Chadwick, & Shaffer, 1983). Rutter and his colleagues (1981) compared the rates of pre-injury behaviour of children between the aged 5 to 14 years in a prospective study. They found that hospitalised children with milder head injuries experienced

higher rates of pre-injury behaviour problems compared to similar others who experienced severe head injuries, and a control group. The severe head injury group did not differ from the control group pre-injury, but did experience more than double the rate of psychiatric disorder at four months follow-up, and at each subsequent follow-up period.

People in their late teens and early twenties often experience the best recovery as the brain has already matured and degenerative changes that may complicate recovery is minimal (Penrod, 1999). In older people, when age-related losses complicate both survival and functional recovery, prognosis is the worst (Penrod, 1999).

The Outcomes of TBI

Neuropsychological assessment provides a valid description of the mental status of the injured person, including both cognitive and affective states (Benton, 1987). It provides valuable information on the strengths and weaknesses in people who suffered a TBI (Lezak, 1995), and is useful in showing long term cognitive difficulties. Cognitive assessment includes evaluation of intelligence and academic performance, adaptive problem solving, memory, information processing speed, perceptual motor skills, and language (Dalby & Obrzut, 1991; Farmer & Peterson, 1995). Assessing for affective problems such as depression, agitation and emotional lability are important, as emotional disturbances may contribute to adjustment difficulties and influence test performance (Benton, 1987; Skell, Johnstone, Schopp, Shaw, & Pertroski, 2000).

Assessment of the competencies and deficits of TBI patients is appropriate after the post-acute stage, as the probable long term neuropsychological status is evident only when improvement has level off (Lezak, 1995). Follow-up assessment over extended periods is necessary as some deficits only become apparent after several months post-injury (Donders & Storm, 2000).

Cognitive Impairment

Cognitive deficits observed after TBI that can influence coping at school and academic performance include: deficits in attention and concentration; memory impairments; lowered information processing speed; impaired reasoning; and difficulties with abstract thinking, sequencing categorising and generalising information. Some of the effects of cognitive impairment are cumulative and may become more pronounced when work load and speed demands increase.

Information processing

Regardless of the severity of brain injury, information processing capacity is reduced as a result of lowered arousal levels, which leads to an increase in central processing time (Gronwall & Sampson, 1974). As a result, the individual may appear slow, distractible, forgetful and inattentive as all of their brain capacity is used attending to the task at hand, and there is no reserves left to either monitor irrelevant stimuli, or attend to additional incoming bits of information (Gronwall, 1989). Although research findings indicate that scores on measures of processing speed return to normal within four weeks post injury (Gronwall & Sampson, 1974; Gronwall & Wrightson, 1975), Gentilini, Nichelli and Schoenhuber (1989) found that reaction times in distributed attention tasks showed no improvement three months post injury. They also suggest that it would appear that tasks that require involvement of the greatest number of cortical and subcortical areas simultaneously are the most useful for revealing cerebral dysfunction associated with concussional damage caused by marginal axonal damage.

Although Tramontana and Cooper (1997) identified no pattern of cognitive deficit specific to brain injury apart from grossly inhibited social behaviour associated with frontal lobe damage in severe brain injury, others (Rutter, 1981; Donders & Strom, 2000), reported that acute damage (PTA $\geq$ one week) resulted in greater intellectual deficits immediately after the injury. These deficits improve progressively during the months following injury. Rutter also noted that although there was improvement over time, severely injured children

(PTA ≥ 3 weeks, or GCS score ≤ 7) showed a persistent decline in cognitive functioning for performance deficits that was more pronounced than verbal deficits. Ewing-Cobbs and Fletcher (1994) suggested that the discrepancy might be explained by the different response requirements, with verbal performance requiring retrieval and use of overlearned information, while performance tasks require speed, motor dexterity and problem solving skills. Hoofien et al. (2000) pointed out that the general slowing in psychomotor abilities and processing speed associated with TBI would affect timed tasks on tests of cognitive ability, and result in lowered ability on these tasks. Lezak (1995) attributed at least some of the slowing of motor responses to compensatory strategies employed by patients who are aware of their processing difficulties.

Attention and Memory

Diffuse brain damage results in deficits in tasks requiring concentration and mental tracking. Because of slowed processing and attentional problems, the child appears more distractable, experiences lowered concentration and increased difficulty in doing more than one task at a time, and may complain of short-term memory problems (Gronwell & Sampson, 1974; Lezak, 1995).

Short term memory problems result in difficulties to remember new facts, names, faces, appointments, and where objects have been placed. Gradual improvement may occur over time (Powell, 1994).

Long-term memory problems resulting from storage and retrieval difficulties may result in the child not being able to remember material learned before the brain injury (Mira, 1992). The effect on learning is compounded by short-term memory, working memory and attentional difficulties that interfere with new learning. Working memory refers to the ability to simultaneously store and process information. It allows for the temporary storage of some information, while the individual concurrently processes incoming data and retrieves appropriate data from long-term storage. The slowed information processing experienced after TBI reduces working memory capacity and interferes with all

cognitive processes that demands speed and access to multiple cortical and subcortical areas simultaneously.

Visuo-Motor Skills

Tramontana and Cooper, (1997) reported greater impairment on timed visuo-spatial and visuo-motor tests than verbal tests for brain injured children. Levin and Eisenberg (1979, cited in Ewing-Cobbs & Fletcher, 1994) found that injured children experienced greater difficulty constructing three-dimensional block designs and copying geometrical figures. Severe brain injury resulted in more pronounced visual and spatial impairment, which was still apparent one year post injury, when compared to mild and moderately injured children on highly speeded tasks. When speed requirements were relaxed, group differences were no longer apparent, suggesting that information processing speed and capacity limitations may be responsible for visuo-spatial and visuo-motor tests difficulties, similarly to those experienced with timed tasks of cognitive ability.

Executive Functioning

Executive functioning is mainly associated with the frontal lobe and interconnected subcortical regions (Denckla, cited in Proctor, Wilson, Sanchez, & Wesley, 2000; Lezak, 1982, 1995) and describes "those mental capacities necessary for formulating goals, planning how to achieve the them, and carrying out the plans" (Lezak, 1982, p. 281). Four groups of mental capacities can be conceptualised, including those necessary to (1) formulate goals; (2) plan; (3) carry out plans to reach goals; and (4) perform the activities effectively. Impairment in executive functioning results in impulsivity, poor attention, inflexibility and poor self-control, and a reduced ability to engage in and maintain independent and socially productive life (Lezak, 1982; Proctor et al., 2000; Rutter, 1981).

Proctor et al. (2000) reported a strong relationship between working memory and executive functioning in adolescents who had experienced closed

head injury. They propose that the relationship could possibly be accounted for by the fact that the skills of everyday living require frequent updating of some information while holding other information in storage (working memory). Intact working memory is needed for goal setting, planning and sequencing awareness, and self-monitoring as they require strategy development, strategy search and actual planning. The group of more severely injured patients exhibited greater deficits in higher cognitive functioning compared to mildly injured persons and the control group. This finding emphasis the importance of assessing working memory and executive functioning for rehabilitation purposes in people that had experienced TBI.

Social and Emotional Adjustment

Fletcher et al. (1990) compared the performance of children aged three to 15 years who had experienced mild, moderate and severe head injuries, on standardised measures of behavioural adjustment. Behaviour ratings were obtained from pre-injury features and at six and 12 month post-injury. Children with severe head injuries showed significant decline in adaptive functioning compared with the other two groups over the 12 months following injury. They also experienced more school problems, and engaged in fewer social activities. Children with mild and moderate injuries did not differ from each other, or from average, normative levels. No distinctive type of behaviour disorder was associated with head injury, but changes in behaviour were associated with indices of injury severity, and not cognitive changes. Below average neuropsychological performance in younger boys (7-8 years) was associated with externalising symptoms, while older children experienced internalising symptoms. A 5-year follow-up of children and adolescents with physical disabilities resulting from brain damage found that social isolation, rather than aggression, was more likely to be present (Breslau & Marshall, 1985). Donders and Strom (2000) reported similar outcomes for moderate and severely brain injured children and adolescents, noting that even though cognitive deficits improve over time, social integration, resulting from inappropriate behaviours and deficits in interpersonal

skills, deteriorated progressively. Rutter (1981) found that the emotional and behavioural problems attributed to brain injury were similar to those not associated with injury in a non-injured group, with the exception of socially inappropriate or disinhibited behaviour.

Rutter (1981, 1997) reported that while mild brain injury did not result in an increased risk of psychiatric disorder, the mild TBI group, when compared with a orthopaedic control group and a severe TBI group, showed an unusual high rate of behavioural disturbance before the accident (impulsive and overactive). He did not find any particular psychiatric disorder that could be specifically associated with brain injury, but found that children who had suffered severe TBI showed an increased risk of psychiatric disorder, regardless of sex, age, or social class. Hoofien et al. (2000) found that long-term symptoms associated with hostility, depression and anxiety were endorsed on tests of psychiatric and psychological symptomology in an adult TBI group. Skell et al. (2000) also reported elevated psychiatric profiles for individuals who had experienced TBI. Although they could not determine whether the increased distress was reflective of the cognitive and behavioural sequelae of TBI or the result of psychiatric disturbance, they found that individuals with higher pre-morbid levels of functioning experienced less distress post-injury. Their research results suggests that individuals with lower premorbid functioning might be at a greater risk of developing secondary psychiatric complications following TBI. In a recent study on coping strategies in TBI patients, Finset and Andersson (2000) reported that pre-morbid personality and coping repertoire determined the strategy patients employed. If an active coping strategy can be equated to a higher level of functioning (how we manage our resources to cope with environmental demands), Finset and Andersson's findings are similar to those reported by Skell and her colleagues. Finset and Andersson (2000) also sound a warning regarding symptoms that result from TBI as opposed to psychiatric disturbance: apathy and depression may be separate and shared symptoms that relate to the cognitive, somatic and affective symptoms of depression, and anhedonia and reduced initiative resulting from TBI. These findings are indicative of the independent role

of TBI in the aetiology of psychiatric disorders, and supports Rutter's findings (1987, 1991) about severe injury posing a risk for increased psychiatric disorder.

The effects of brain injury persist over time. Individuals who had experienced TBI, may encounter adjustment problems resulting from cognitive deficits and impaired executive and emotional functioning (Lezak, 1987). Social and emotional problems are common and profound and affect all areas of functioning, emphasising the importance of accurate detection of the effects of the insult on the cognitive, emotional, behavioural and social domains. The CBCL/4-18 and related instruments can contribute valuable information regarding the emotional and behavioural competencies and problems as observed by different informants, as well as those reported by the client. Research findings indicate that some of the symptoms of psychopathology are also the outcomes of TBI. Comparing the profiles of adolescents, who had experienced TBI with those of a normative group, will help us determine whether it is appropriate to use existing norm when assessing someone who has experienced TBI. If significant between group differences exist, sub-group norms would be more appropriate, taking into consideration the possibility that specific TBI symptomology may be the result of TBI, rather than psychopathology.

Chapter 4

FORMULATION

Concerns about using U.S. normative data to assess behavioural problems in New Zealand has motivated this research project. When considering the effect of culture on the emotional and behavioural functioning of children and adolescents, as discussed earlier, comparison of New Zealand and U.S. data seems justified. The second line of inquiry, to determine whether the symptoms of TBI could possibly be misinterpreted as psychopathology when using the CBCL/4-18, is also relevant when the structure of the CBCL/4-18 is examined. Research findings highlight social integration/participation as a major problem experienced by people who have experienced TBI, due to the behavioural and emotional problems resulting from the injury. Being able to assess social competence, as well as behavioural and emotional problems, could highlight areas of functioning that may be different for the TBI sample, compared to the uninjured group.

Hypothesis 1:

There will be a significant difference between the New Zealand pilot norms and American norms for the CBCL/4-18.

Hypothesis 2:

There will be a significant difference between the New Zealand pilot norms and American norms for the YSR.

Cultural differences are reflected in emotional and behavioural functioning between cultures. More diverse cultures deviated further from an omnicultural mean when emotional and behavioural functioning were compared between young people representing 12 different cultures (Crijnen, Achenbach, and Verhulst (1997, 1999). Although New Zealand is in certain respects similar to the U.S., the

countries do differ in cultural composition. Research in Sydney (Australia) have highlighted significant differences between the Australian and U.S. samples (Achenbach, Hensley, Phares, & Greyson, 1990). If New Zealand and Australia can be considered to be cultural similar, it is essential to compare New Zealand behaviour and emotional functioning to that of the U.S. to determine whether U.S. norms can be used with confidence in New Zealand.

Hypothesis 3:

New Zealand youths that have experienced closed head injuries will have significant higher problem and lower competence scores, compared with those results obtained from uninjured subjects.

TBI often result in cognitive, emotional and personality changes (Lezak, 1995). The CBCl/4-18 and YSR assess a wide range of behavioural and emotional problems. As some of these problems may be the result of TBI, higher problems and lower competencies scores will reflect the impact of TBI on emotional and behavioural functioning.

Hypothesis 4:

There will be a significant difference between the emotional and behavioural problems as observed by girls compared to boys.

Research findings indicate that problems of conduct (externalising behaviour) are more prevalent than emotional problems, and that psychological problems are more prevalent among boy than girls. Prevalence of externalising problems is higher in boys, while internalising problems (anxious/depressed, social and somatic complaints) are more prevalent in girls (Cohen et al., 1993).

Hypothesis 5:

There will be low correlation between reports obtained form parents (CBCL/4-18) and the self-reports completed by the participants (YSR).

Researchers consistently report low correlation between parents and children, depending on age and population (Achenbach, McConaughy, & Howell, 1987; Handwerk, Larzelere, Soper, & Friman, 1999; Verhulst & van der Ende, 1991). Possible reasons for this may include reporter biases, lack of reliable information, or, from the child's perspective, fear of punishment.

Chapter 5

METHOD

This study combines New Zealand data obtained from three sources, the current study, an independent study reporting on TBI in New Zealand adolescents (Leathem & Body, 1997), and CBCL data from the Massey University Clinic for clients that had previously experienced TBI. The New Zealand data will be compared to the U.S. normative data.

Sample Descriptions

American sample

U.S. data were collected over a 3-year period starting in 1989 and consisted of follow-up assessments of the original sample assessed in 1986. The sample was selected to be representative of the U.S. population for ethnicity, socioeconomic status, geographical region, and area of residence. Adolescents and children were excluded from the normative sample if they had received mental health services or special remedial school classes in the preceding 12 months (Achenbach, 1991).

NZ samples

Participants

Current study

Data for the current study were collected from volunteer student participants from four normal co-ed schools on the North Shore of Auckland, including one private and three state school. Three hundred and fifty students took information packs home. Of these, 51 students and 42 parents returned the signed consent forms and completed research questionnaires. The demographic

characteristics of the students who returned completed CBCL and/or YSR forms are presented in Table 5.1.

The schools reflected the heterogenous mix of the North Shore region in terms of financial, educational and cultural backgrounds as a zoning system determine that students living within a particular area would attend the school closest to home. Students were excluded from the study if they were seeing a school psychologist, school counsellor or psychiatrist.

Leathem and Body (1997) study

Leathem and Body (1997) reported on the incidence and neuropsychological sequelae of head injury in a New Zealand adolescent sample. Participation was invited from 13- and 14-year-old students (fourth formers) from Awatapu College in Palmerston North. Research data for 35 students, from an initial group of 135 participants, are included in the current study. Of the 35 participants, 18 students had previously experienced a head injury, and 17 students were included as the control group. (See Body (1995) and Leathem and Body (1997) for a complete review of this study).

Massey University Clinic data

CBCL information for 10 students, provided by parents or caregivers as part as intake procedure at the Massey University Clinic was included in the data analysis to provide information on adolescents who had previously sustained a TBI. Prior permission was given by parents and caregivers to use assessment data for research purposes. Demographic data for the combined New Zealand group is provided in Table 5.2.

Table 5.1

Demographic data for students who returned a completed CBCL (N = 43) and YSR form (N = 53)

Characteristics	*CBCL*		*YSR*	
	N	%	*N*	%
Gender				
Male	19	(44.2)	23	(43.4)
Female	24	(55.8)	30	(56.9)
Ethnicity				
European	35	(81.4)	43	(81.1)
Maori	2	(4.7)	2	(3.8)
Maori/European	1	(2.3)	3	(5.7)
Asian	2	(4.7)	3	(5.7)
Other	3	(7.0)	2	(3.8)
Age				
11	3	(7.0)	4	(7.5)
12	23	(53.5)	24	(45.3)
13	11	(25.6)	17	(32.1)
14	5	(11.6)	5	(9.4)
15	1	(2.3)	1	(5.7)

Table 5.2

Current Study: Demographic Information of the All Students whose Parents completed the CBCL/4-18 (N=87).

	STUDY		
Characteristics	*Current*	*Body*	*Clinic*
	N=43	*N=34*	*N=10*
Gender			
Male	19	21	8
Female	24	13	2
Ethnicity			
European	35	26	8
Maori	2	4	1
Maori/European	1	2	1
Asian	2	-	-
Other	3	2	-
Age			
11	3	-	2
12	23	-	2
13	11	-	2
14	5	34	2
15	1	-	2
TBI			
No TBI	43	16	
Male	19	11	-
Female	24	5	
TBI		18	10
Male		10	8
Female		8	2

Procedures and Instruments

Procedure:

The researcher contacted intermediate and secondary school principals in the North Shore region of Auckland by phone to introduce herself and explain the purpose of the study and asked them to allow their students and staff to participate in the study. If an introductory meeting was set up at the time of first contact, an information pack was left with the contact person during the initial meeting. The pack contained a letter outlining the aim of the study (Appendix I), and a consent form to indicate the willingness of the school to participate in the study (Appendix V). Examples of the information letters, consent forms and the questionnaires intended for parents and participants (Appendices II - IV and VI – XII) were also included. Principals who declined involvement at this point were thanked for their time. An information pack was sent to principals who requested more information during the initial phone contact. If principals had not responded within two weeks after sending the pack, they were followed up by telephone. During the follow-up an appointment was made if the principal expressed interest. If not interested, the principal was thanked for his time and interest. All principals willing to participate completed the consent forms at the time of the interview.

On receiving the completed consent forms, a second appointment was made with the principal and teachers during which the aims and practical issues relating to the recruitment of students and teachers were discussed. Teachers who agreed to participate in the study were provided with an information sheet detailing the aims of the study and a consent form (Appendices IV and IX). All the participating schools required that only those student attending the classes of teachers who volunteered to participate in the study themselves, would be approached.

Appointments were set up with individual teachers and their selected classes to provide information to the students. The aims of study and issues of confidentiality and anonymity were discussed with students. At the end of the meeting, students who were interested to take part were provided with an information pack. The pack contained information sheets and consent forms for themselves and their parents (Appendices II,

III, and VI – VIII), the Youth Self-Report Form (Appendix XI) and the CBCL/4-18 (Appendix X). Students were instructed to read the information and complete the consent forms, with their parents, before completing the YSR independently. Parents were asked to do the same before completing the CBCL.[1] Completed forms were returned to the school, and later collected by the researcher. Individual homeroom teachers were asked to complete the TRF for any students only after receiving consent for their participation from participants and their parents.

[1] Due to difficulties experienced in setting up appointments with parents, the parents in the first two participating groups were given the choice of either completing the CBCL in the presence of the researcher, or completing the questionnaire by themselves and returning it to the researcher on completion. All parents choose to receive, complete and return the completed questionnaires to the researcher. This format was followed for the remainder of the research project.

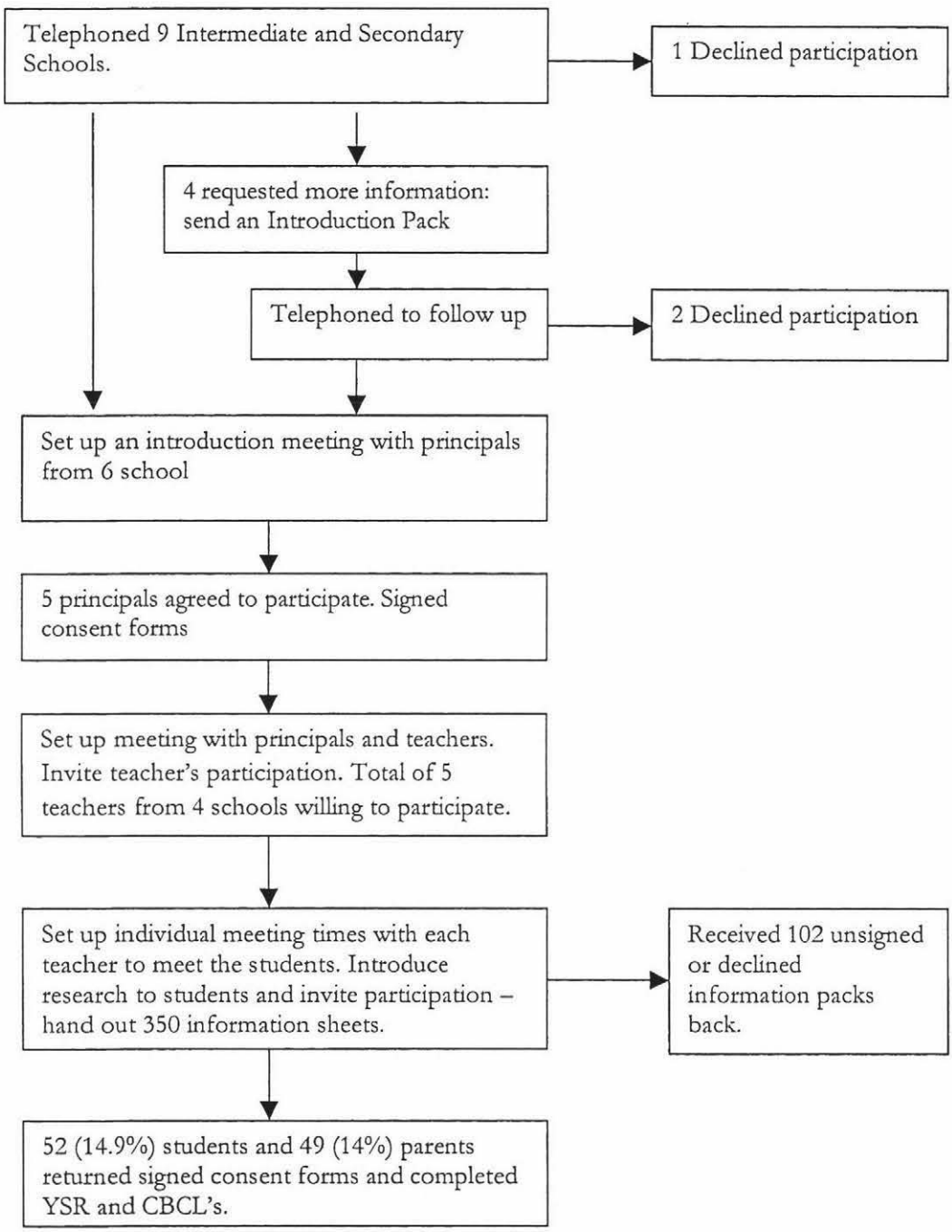

Figure 5.1

Flow chart of procedure followed.

Instruments

The Child Behaviour Checklist (CBCL/4-18)

The CBCL/4-18 (Achenbach, 1991a) is a structured rating scale used to obtain standardised descriptions of the child's competencies and emotional and behavioural problems as observed by the parent, over that last six months. The CBCL is intended for use with children aged four to 18. It consists of 20 items assessing competence and 118 items assessing behavioural and emotional problems. The competence items include ratings of the number and frequency of participation in activities, social relationships and school functioning while the problem items describe a broad range of emotional and behavioural problems. Behavioural and emotional problems are rated on a 3-point scale. Parents are instructed to circle *0* when the problem items was not true, *1* if the item is somewhat or sometimes true, and *2* if the item is very or often true.

Behaviour is described on eight narrow band syndrome scales and two broad band scales. These include Withdrawn, Somatic Complaints, Anxious-Depressed, Social, Thought, Attention, Delinquent and Aggressive Behaviour Problems, and Internalising and Externalising Problems.

Youth Self-report (YSR)

The YSR form (Achenbach, 1991b) is the self-report version of the CBCL/4-18 and parallels the competence and problem items of the CBCL/4-18. The YSR is intended for use with student between the ages of 11 and 18 years. Students participating in the research are instructed to circle a *0* when the problem items was not true, *1* if the item is somewhat or sometimes true, and *2* if the item is very or often true. The YSR is scored the same as the CBCL/4-18, and the same scales are obtained.

Teachers Report Forms (TRF)

The TRF (Achenbach, 1991c) is modelled on the CBCL/4-18 and consists of 10 items to assess academic and adaptive functioning, and the 118 parallel behavioural/emotional items. The TRF is intended for use with children five to 18 years of age. Teachers describe behaviour as observed over the previous two months.

Problem items are scored the same as the CBCL/4-18 and has the same problem scales, that enable comparison between the instruments, are obtained.

Participants and their parents complete the CBCL and YSR at home, and rated behaviour displayed during the preceding six months. Teacher completed the Teachers Report Forms at home or school, and rated behaviour as observed over the proceeding two to six months.

Achenbach (1991a, b, c) reported good validity and reliability for the CBCL, YSR and TRF (See Table 2.3). The English version of the CBCL was used.

Ethical Issues

The Massey University Human Ethics Committee approved this study.

Chapter 6

RESULTS

CBCL/4-18 and YSR forms for the participating students were checked for completeness, hand scored and double-checked thought the use of an Excel scoring spreadsheet. Data analyses on the scored data were made using the SPSS for Windows software package, version 9.

Comparison of mean raw scores between New Zealand and USA:

Independent-samples t-tests were used to determine significant differences between the mean raw scores on the problem and competence scales of the CBCL/4-18 and the YSR respectively. The means and standard deviations for New Zealand boys and girls are presented and contrasted with U.S. normative data in Tables 6.1 and 6.2. Calculated *t*-values for the contrasted pairs are shown. It is important to note that lower problems scores are associated with fewer emotional and behavioural problems, and higher competence scores are associated with greater competence (better coping).

CBCL/4–18

The New Zealand boys' problem scores were not significantly different from the U.S. norms, but they did scored significantly higher on the School Performance competence scale than U.S. boys. New Zealand girls scored lower on the Withdrawn Problem scale (less withdrawn) than U.S. girls on the CBCL/4-18 and there were no significant differences on the competence scale score.

YSR

New Zealand boys obtained scores significantly lower than U.S. boys on the Withdrawn, Anxious/Depressed, Attention, Internalising and Total problems scales, while New Zealand girls scored significantly lower that U.S. girls on the Anxious/Depressed and Internalising scales, all suggesting fewer problems.

Table 6.1

New Zealand – U.S. Comparative Raw Mean Scale Scores for Boys and Girls on the CBCL/4-18.

Age	BOYS 11 - 15				GIRLS 12 - 18			
	NZ		U.S.		NZ		U.S.	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*t-value*
Withdrawn	2.4	(2.8)	2.4	(2.2)	0.08	1.6	(2.2)	2.6	(2.4)	-2.14[U]
Somatic Complaints	1.4	(1.7)	1.0	(1.74)	1.62	1.3	(1.8)	1.4	(2.0)	-0.33
Anxious/Depressed	3.8	(4.1)	3.2	(3.3)	0.95	2.8	(3.6)	3.8	(3.8)	-1.44
Social Problems	2.0	(2.7)	1.6	(1.9)	1.08	1.2	(1.9)	1.8	(2.1)	-1.48
Thought Problems	0.8	(1.4)	0.5	(0.9)	1.69	0.8	(2.3)	0.5	(1.0)	1.37
Attention Problems	4.3	(4.4)	3.4	(3.1)	1.44	2.8	(3.7)	2.6	(2.8)	0.29
Delinquent Behaviour	1.5	(1.8)	1.9	(2.4)	-0.97	1.3	(2.0)	1.4	(1.9)	-0.25
Aggressive Behaviour	6.1	(5.4)	7.0	(5.7)	-0.87	4.5	(6.3)	6.0	(5.4)	-1.45
Internalising	7.4	(7.2)	6.5	(5.3)	0.85	5.6	(6.4)	7.5	(6.6)	-1.49
Externalising	7.1	(6.6)	8.9	(7.5)	-1.28	5.7	(8.2)	7.4	(6.7)	-1.29
Total Problems	23.1	(20.1)	23.0	(16.7)	0.03	18.3	(20.4)	22.7	(17.8)	-1.29
[*N*]	[30]		[450]			[29]		[459]		
Activities	7.1	(1.5)	6.7	(1.6)	1.15	6.6	(1.2)	6.6	(1.7)	-0.05
Social Competence	6.9	(2.1)	7.6	(2.0)	-1.50	7.0	(2.3)	7.4	(2.1)	-1.00
School	5.4	(0.5)	4.8	(1.1)	2.35[N]	5.3	(0.5)	5.3	(0.9)	0.50
Total Competence	19.4	(3.1)	19.1	(3.5)	0.39	18.8	(3.0)	19.3	(3.5)	-0.64
[*N*]	[19]		[450]			[24]		[459]		

[N] NZ > U.S. at $p < .05$
[U] U.S. > NZ at $p < .05$

Table 6.2

New Zealand – U.S. Comparative Raw Mean Scale Scores for Boys and Girls on the YSR.

Age	BOYS 11 – 15		BOYS 12 – 18			GIRLS 11– 15		GIRLS 12 – 18		
	NZ		U.S.			NZ		U.S.		
[*N*]	23		536			30		518		
	Mean	*SD*	*Mean*	*SD*	*t-value*	*Mean*	*SD*	*Mean*	*SD*	*t-value*
Withdrawn	1.2	(1.3)	3.4	(2.3)	-4.61**	3.3	(2.8)	4.0	(2.4)	-1.61
Somatic Complaints	1.5	(1.8)	2.2	(2.3)	-1.40	2.8	(2.4)	3.0	(2.9)	-0.43
Anxious/Depressed	2.9	(2.4)	5.2	(4.3)	-2.53*	4.2	(3.6)	6.5	(5.1)	-2.47*
Social Problems	2.6	(3.7)	2.7	(2.1)	-0.20	2.4	(2.3)	2.7	(2.2)	-0.72
Thought Problems	1.7	(2.2)	2.3	(2.1)	-1.35	1.8	(2.4)	2.5	(2.3)	-1.54
Attention Problems	3.3	(2.4)	4.7	(3.0)	-2.27*	4.0	(2.7)	4.7	(3.1)	-1.21
Delinquent Behaviour	2.3	(1.9)	3.1	(2.5)	-1.51	2.6	(2.2)	2.5	(2.2)	0.24
Aggressive Behaviour	6.7	(3.2)	8.4	(5.3)	-1.57	8.4	(4.6)	8.1	(5.5)	0.36
Self Destruct	1.5	(1.6)	1.9	(2.2)	-0.82	-	-	-	-	
Internalising	5.5	(4.0)	10.5	(7.1)	-3.34**	9.9	(7.4)	13.1	(8.6)	-1.97*
Externalising	9.0	(4.5)	11.5	(7.1)	-1.70	11.0	(6.0)	10.5	(6.4)	0.45
Total Problems	22.0	(12.8)	37.3	(19.5)	-3.73**	32.6	(19.7)	39.6	(21.8)	-1.71
Activities	5.0	(1.4)	4.8	(1.4)	0.67	4.9	(1.7)	4.9	(1.3)	-0.08
Social Competence	7.3	(2.0)	7.2	(1.8)	0.16	7.1	(2.2)	7.3	(2.1)	-0.50
Total Competence	14.6	(3.0)	14.4	(2.7)	0.35	14.2	(3.4)	14.7	(3.0)	-0.90

* NZ < U.S.A at $p < .05$

** NZ < U.S.A at $p < .001$

Comparison of CBCL/4-18 mean raw scores for New Zealand boys and girls with and without TBI:

The means, standard deviations and *t*-values for the CBCL/4-18 problem and competence scales for students with and without TBI, are presented in Table 6.3. Injury severity for the students with TBI ranged from mild to moderate, with only one severe case and severity rating for three of the students not available. Lower problems scores are again associated with fewer emotional and behavioural problems and higher competence scores are associated with greater competence.

Boys who have previously experienced TBI scored significantly higher on the Somatic, Thought, Attention, Delinquent, Aggressive, Externalising and Total problem scales. They also obtained significantly lower scores on all the competence scales compared to the boys without TBI. Girls who have experienced TBI scored significantly higher on the Withdrawn, Social, Attention, Aggressive and Total problem scales significantly lower on Activities, School and Total Competence scales compared to girls without TBI.

Comparison of CBCL/4-18 scale means between New Zealand boys and girls:

The means, standard deviation and *t*-values for scale scores obtained on the CBCL/4-18 and the YSR are presented in Table 6.4. Lower problems scores are again associated with fewer emotional and behavioural problems and higher competence scores are associated with greater competence. The mean age for both boys and girls was 12.6 years (*SD* 1.1 for girls and .8 for boys). There was no significant difference between boys and girls, as rated by parents, on any of the problem or competence scales of the CBC/4-18. On the YSR, boys scored significantly lower than girls on the Withdrawn, Somatic, and Internalising and Total Problem scales.

Table 6.3

New Zealand No TBI –TBI Comparative Raw Mean Scale Scores for Boys and Girls on the CBCL/4-18.

	BOYS				GIRLS			
	No-TBI		TBI		No-TBI		TBI	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*t-value*
Withdrawn	2.4	(2.8)	3.2	(2.3)	-0.84	1.6	(2.2)	3.5	(2.9)	-2.13*
Somatic Complaints	1.4	(1.7)	3.3	(2.3)	-2.66**	1.3	(1.8)	2.4	(3.5)	-1.32
Anxious/Depressed	3.8	(4.1)	4.8	(4.3)	-0.76	2.8	(3.6)	5.0	(4.9)	-1.55
Social Problems	2.0	(2.7)	2.9	(2.1)	-1.10	1.2	(1.9)	3.7	(3.6)	-2.80**
Thought Problems	0.8	(1.4)	1.8	(2.1)	-2.13*	0.8	(2.3)	1.2	(1.7)	-0.51
Attention Problems	4.3	(4.4)	8.9	(3.0)	-3.30***	2.8	(3.7)	9.3	(6.9)	-3.81***
Delinquent Behaviour	1.5	(1.8)	3.7	(2.5)	-3.56***	1.3	(2.0)	2.5	(1.6)	-1.71
Aggressive Behaviour	6.1	(5.4)	11.0	(5.3)	-2.82**	4.5	(6.3)	11.3	(9.7)	-2.54*
Internalising	7.4	(7.2)	11.0	(2.2)	-1.53	5.6	(6.4)	10.6	(9.5)	-1.86
Externalising	7.1	(6.6)	12.7	(7.1)	-2.50*	5.7	(8.2)	11.4	(10.4)	-1.76
Total Problems	23.1	(20.1)	45.2	(7.1)	-3.09**	18.3	(20.4)	39.4	(26.8)	-2.60**
[*N*]	[30]		[17]			[29]		[10]		
Activities	7.1	(1.5)	5.0	(2.1)	2.95^{33}	6.6	(1.2)	4.5	(0.7)	2.37^{3}
Social Competence	6.9	(2.1)	4.7	(1.9)	2.62^{33}	7.0	(2.3)	4.0	(0.7)	1.79
School	5.4	(0.5)	3.3	(1.5)	5.56^{333}	5.3	(0.5)	2.8	(1.8)	5.95^{333}
Total Competence	19.4	(3.1)	13.0	(4.1)	4.47^{333}	18.8	(3.0)	11.3	(3.2)	3.43^{333}
[*N*]	[19]		[8]			[24]		[2]		

* No-TBI < TBI at $p < .05$
** No-TBI < TBI at $p < .001$
*** No-TBI < TBI at $p < .0001$
^{3}No-TBI > TBI at $p < .05$
^{33}No-TBI > TBI at $p < .001$
^{333}No-TBI > TBI at $p < .0001$

Table 6.4

New Zealand Boys – Girls Comparative Raw Means Scale Score obtained on the CBCL/4-18 and YSR.

	CBCL/4-18				YSR			
	BOYS		GIRLS		BOYS		GIRLS	
	Mean	*SD*	*Mean*	*SD*	*t-value*	*Mean*	*SD*	*Mean*	*SD*	*t-value*
Withdrawn	2.4	(2.8)	1.6	(2.2)	1.25	1.2	(1.3)	3.3	(2.8)	-3.34***
Somatic Complaints	1.4	(1.7)	1.3	(1.8)	0.35	1.5	(1.8)	2.8	(2.4)	-2.10*
Anxious/Depressed	3.8	(4.1)	2.8	(3.6)	1.04	2.9	(2.4)	4.2	(3.6)	-1.44
Social Problems	2.0	(2.7)	1.2	(1.9)	1.30	2.6	(3.7)	2.4	(2.3)	0.25
Thought Problems	0.8	(1.4)	0.8	(2.3)	0.01	1.7	(2.2)	1.8	(2.4)	-0.21
Attention Problems	4.3	(4.4)	2.8	(3.7)	1.43	3.3	(2.4)	4.0	(2.7)	-1.04
Delinquent Behaviour	1.5	(1.8)	1.3	(2.0)	0.32	2.3	(1.9)	2.6	(2.2)	-0.51
Aggressive Behaviour	6.1	(5.4)	4.5	(6.3)	1.03	6.7	(3.2)	8.4	(4.6)	-1.58
Self Destruct	-	-	-	-	-	1.5	(1.6)	-	-	-
Internalising	7.4	(7.2)	5.6	(6.4)	0.98	5.5	(4.0)	9.9	(7.4)	-2.59**
Externalising	7.1	(6.6)	5.7	(8.2)	0.71	9.0	(4.5)	11.0	(6.0)	-1.39
Total Problems	23.1	(20.1)	18.3	(20.4)	0.91	22.0	(12.8)	32.6	(19.7)	-2.25*
[*N*]	[30]		[29]			[23]		[30]		
Activities	7.1	(1.5)	6.6	(1.2)	1.31	5.0	(1.4)	4.9	(1.7)	0.27
Social Competence	6.9	(2.1)	7.0	(2.3)	-0.09	7.3	(2.0)	7.1	(2.2)	0.27
School	5.4	(0.5)	5.3	(0.5)	0.71	-	-	-	-	-
Total Competence	19.4	(3.1)	18.8	(3.0)	0.63	14.6	(3.0)	14.2	(3.4)	0.47
[*N*]	[19]		[24]			[23]		[30]		

* Boys < Girls at $p < .05$

** Boys < Girls at $p < .001$

*** Boys < Girls at $p < .0001$

Cross Informant Pearson Correlation for Boys and Girls:

Correlation between mean scale scores obtained from parent and self-ratings on each of the problem and competence scales are presented in Table 6.5 for New Zealand boys and girls. Data from participants who returned both a parent and a self-report form were included in this analysis. Ten father and 34 mothers completed the CBCL/4-18 and two questionnaires were complete by both mothers and fathers. The only significant correlations found were between parent and girl's reports for Aggressive and Externalising Behaviours. A mean correlation of .25 was found between parents and girls' reports, and .04 between parents and boys. Mean correlations of .22, (Achenbach, McConaughy, & Howell, 1987) and .25 (Achenbach, 1991) between parents' and self-reports have been reported.

Table 6.5

Cross-Informant Pearson Correlations for Boys and Girls Aged 11 – 15.

	PARENT COMPARED TO	
	BOYS	GIRLS
	N =19	*N* =25
Withdrawn	-0.18	0.33
Somatic Complaints	0.10	0.13
Anxious/Depressed	-0.17	0.11
Social Problems	0.22	0.18
Thought Problems	-0.21	0.02
Attention Problems	0.12	0.17
Delinquent Behaviour	-0.04	0.16
Aggressive Behaviour	-0.06	0.60**
Internalising	-0.12	0.20
Externalising	-0.06	0.51**
Total Problems	-0.02	0.31
Mean *r*	-0.04	0.25

** Correlation is significant at the 0.01 level (2-tailed)

Chapter 7

DISCUSSION

This purpose of this study was to establish New Zealand problem and competence scale scores for the CBCL/4-18, YSR and TRF, and determine whether the U.S. norms could be used with confidence in New Zealand. The study also set out to determine whether current CBCL/4-18 norms could be used with children who have experienced TBI, or whether subgroup norms would be more appropriate. Lastly, responses between parent and child self-reports were compared to determine whether this study supports existing research reports of the low correlation found between different informants.

The U.S. procedure for data collection was not duplicated in this study. The sample was not stratified and questionnaires were completed by parent and students at home, and returned to school from where it was collected. Recruitment was done at schools where all students attending volunteer teacher's classes were invited to take part, independent of ethnicity and socioeconomic status, as the Massey University Human Ethics Committee required that all students had an equal opportunity to participate. Low response rates (14.9% for the YSR and 14% for the CBCL/4-18) prohibited exclusion of any returned, completed questionnaires.

The questionnaires completed by 11-year olds were included in the results, as the inclusion resulted in negligible differences in mean scale scores.

Child Behaviour Checklist

The CBCL/4-18 scores were compiled from two independent studies. The age range included in the New Zealand study was narrower and younger (11–15) than the group comprising the Achenbach (1991a) standardisation sample. This lead to an expectation of higher externalising and lower internalising behaviour scores, as research indicates a higher incidence of externalising and a lower

incidence of internalising problems at younger ages (Carr, 1999). CBCL/4-18 problem scale scores for New Zealand boys did not differ significantly from those reported by Achenbach (1991a), while New Zealand girls scored significantly lower than the U.S. girls only on the Withdrawn syndrome scale. New Zealand boys scored significantly higher than U.S. boys on the School Performance competence scale, while there was no significant differences between the New Zealand and U.S. competence scale scores. The higher school performance by boys may again be related to the younger age of our sample, resulting from fewer extracurricular and after school work and social commitments.

Youth Self-Report Form

New Zealand boys scored lower than U.S. boys on the Withdrawn, Anxious/Depressed, Attention, Internalising and Total Problem scales. New Zealand girls scored lower on the Anxious/Depressed and Internalising scales. Again, this effect is possibly explained by the younger age of the New Zealand sample, as research indicates that the incidence of internalising problems are lower at younger ages, and increase for older adolescents (Carr, 1999). There were no significant differences between scores obtained on the competence scales for either New Zealand boys or girls, compared to their U.S. counterparts.

Teachers Report Form

Comparison between New Zealand and U.S. TRF was not possible due to insufficient data. Although teachers had expressed interest in the concept of obtaining information relating to child development and accurate assessment of child emotional and behavioural functioning, they indicated that they were either too short of time (overworked), or that it could not be considered to be their responsibility. Accordingly, there were very few volunteers.

Traumatic Brain Injury

Boys who have previously experienced TBI scored higher on the Somatic, Thought, Attention, Delinquent, Aggressive, Externalising and Total Problem scales, while girls who have experienced TBI scored higher on the Withdrawn, Social, Attention, Aggressive and Total Problem scales of the CBCL/4–18. Boys also obtained lower scores on all the competence scales compared to boys who have not experienced TBI, while girls who have experienced TBI score lower on Activities, School and Total Competence scales compared to uninjured girls. Research indicates that social integration/isolation, resulting from increased aggressive or disinhibited behaviour after TBI progressively deteriorates, and cognitive deficits resulting from TBI can influence coping at school and influence academic performance (Breslau & Marshall, 1985; Donders and Strom, 2000; Hoofdien et al., 2000; Rutter, 1981).

In the current study, there is evidence for the emotional, behavioural and social problems that can be experienced as a result of TBI, which probably account for the significant differences in the mean scale scores of the CBCL/4-18. It is suggested that CBCL/4-18 users be vigilant in determining whether a client has experienced TBI. Such results should be interpreted cautiously, as the CBCL/4-18 could be biased by the symptoms of neuropathology, masking as psychopathology (Leathem & Babbage, 2000). Future research involving larger samples is needed before results could be generalised. If these results are supported by other research, the establishing of subgroup norms could be a valuable addition to the CBCL and related instruments, as TBI occurs frequently, and has long term consequences for both the family and the injured person.

Comparison of means between New Zealand Boys and Girls:

There were no significant differences between boys and girls, as rated by parents, on any of the problem or competence scales of the CBC/4-18. This was an unexpected result, as research indicates higher incidences of externalising behaviour in boys and higher incidences of internalising behaviour in girls (Carr,

1999; Cohen et al., 1993; Crijnen, Achenbach, and Verhulst, 1997, 1999). Higher androgen levels in boys are associated with acting out behaviour in teenage boys, and higher oestrogen levels in girls contribute to verbal aggression and higher levels of depression (Susman et al., 1987). It is important, though, to remember that the process of puberty starts later for boys than for girls (13 and 11 years respectively). It is possible that the role that hormones play in the different behaviour patterns as observed between pubescent boys and girls were not yet present, as the boys in the sample may in fact still be prepubescent.

On the YSR, boys scored significantly lower than girls on the Withdrawn, Somatic, Internalising and Total Problem scales, which may be a result the developmental difference discussed earlier. If the girls have already entered puberty, they may be experiencing some of the internalising behaviours associated with higher oestrogen levels. As youths are better at describing internalising behaviours that their parents, this could explain the lack of any significant behaviour differences observed on the parent reports, while being reported at significantly higher levels by girls on self-reports.

Cross Informant Pearson Correlation for Boys and Girls:

It is generally excepted that youths are better at describing internalising states, while adults are better at describing observable or objective (acting-out or externalising) behaviours in children. For girls, but not the boys, this pattern was followed. The only significant correlations found were between parents and girls, for Aggressive and Externalising problem behaviour. It is possible that as aggressive behaviour is more acceptable in boys than girls (Inoff-Germain et al., 1988), parents would be more aware of girls' aggressive behaviour and more tolerant of the aggressive behaviour of boys. This could possibly explain the significant correlation between reports form girls and parents, but not boys and parents. The mean correlation between girls and parent ratings was similar to those reported by Achenbach (1991). The mean correlation between boys and their parents was much smaller. It is possible that this, again, is a result of the

younger sample, though it seems unlikely, as no age effect was reported by either Achenbach (1991) or Achenbach, McConaughy and Howell (1987).

It would appear that the boys in the sample differ systematically form the boys in the Achenbach sample, and from the girls in the New Zealand sample. As the boys and girls were recruited in the same way, this seems unlikely. Another possibility is that the boys were more concerned with giving socially acceptable responses. Considering that the CBCL sample comprised two independent samples, recruited by different researchers, for different research purposes, this again seems unlikely. To get a clearer understanding of this phenomenon, and to be able to generalise these results, research with larger samples is necessary.

Conclusion

The current study aimed to compare New Zealand and U.S. problem and competence scale sores for the CBCL/4-18 and the YSR. Although the New Zealand sample was much smaller than the U.S. standardisation sample, it would appear, from the results obtained in this study, that U.S. norms could be used with confidence in New Zealand. Considering the size of the samples, though, these results should be interpreted with caution and future research should aim to increase the sample size and diversity. The scale scores generated in this study should by no means be interpreted as New Zealand norms. At best, it can be considered a starting point in the data collection process. Data on clinically referred New Zealand children should be included in future studies to provide information on the accuracy of cut-off scores to determine clinical or non-clinical status.

TBI can contribute or cause a varied range of emotional, behavioural and social problems for the injured person. It is possible that some of these problems can be attributed to psychopathology, while being the result of neuropathology. Extreme care should be taken when interpreting the results of a brain injured person in order to ensure appropriate treatment options, resulting from assessment.

Using data from a smaller age range that the U.S. may limit generalisability of the results. Future research including the other age ranges can reduce this limitation. The low response rate experienced in this study is also a concern. On a number of returned questionnaires that were not completed, parents have made the comment that they felt "over-surveyed". Although the parents' message was different from the teachers' message, they resulted in the same outcome: insufficient numbers of research participants. It is possible that a higher response rate could be obtained if potential participants are offered financial remuneration for the time spent on competing research questionnaires. This was unfortunately not possible due to restrictions set by the Massey University Human Ethics Committee, and also resource limitations (costs are borne by the researcher).

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APPENDICES

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Facsimile: 64 9 443 9732

Appendix I

Information sheet for Principals/Boards of Trustees

The Child Behaviour Checklist: Establishing New Zealand Norms

The Principal
ABC School
Town

Dear Sir/Madam

Re **Our discussion: Requesting participation of {school} in a Masters thesis study**

Further to our recent discussion, I am now writing to formally outline my research project, which will form the basis of a master's degree in psychology at Massey University, Palmerston North. My thesis project involves establishing normative data for the Child Behaviour Checklist (CBCL; Achenbach, 1998) drawn from the New Zealand child and adolescent population, and comparing this with the current (United States) norms being used.

The CBCL is used to assess the competencies and problems of youths, ages 4 - 18, by using self-reports, as well as teachers and parents reports. The measure is used widely in clinical settings in New Zealand but norms against which the reported behaviour and competency of any one individual are compared were drawn from a United States sample. It is important that the normative data is representative of the population who will be assessed.

The aim of this study is to gather CBCL data from a New Zealand sample of children and adolescents, and to compare this with the U.S. norms. It would then be possible to determine how just appropriate it is to use U.S. normative data for young people in New Zealand.

As this study requires establishing group norms, no individual performance will be identified, and no harm will come to any participating individual. Any information gathered will be stored in a locked safe. The information obtained will only be used to complete a thesis project, which will be submitted to Massey University to be marked. The outcome of the study is also likely to be published in a professional journal.

The involvement of your school in this project would involve:

- Sending information sheets home with the weekly newsletter.
- Receiving the returned consent forms from students.
- Obtaining a teacher's report form for students wishing to participate in the study.
- Allowing sufficient time to explain the purpose of the study to student and teachers, and to complete the questionnaires.

I would be pleased to speak to the Board of Trustees about the study prior to the granting of approval, and to the teachers to explain to them the purpose and procedure of the study, should you decide to allow the involvement of your school.

I again emphasise that the purpose of the study is to obtain information on behaviour typical to young people without disabilities, so that behaviour outside the norm can be more reliably assess by clinicians. The study does NOT in any way assess the performance of any individual. The study has been considered and approved by the Massey University, Human Ethics Committee.

I appreciate your consideration of this request and look forward to discussing it further with you. If you need any additional information, please do not hesitate to contact me on 09-446 0655 (Email: jeanne@xtra.co.nz) or my supervisor Professor Janet Leathem (Email J.M.Leathem@massey.ac.nz) on 06-356 9099. To confirm your school's participation, please complete the attached consent for and return it to me in the stamped addressed envelope enclosed.

Thank you for your co-operation.

Jeanne le Roux
Researcher

Janet Leathem (PhD)
Professor of Neuropsychology
Clinic Director

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
Private Bag 102 904,
North Shore Mail Centre,
Auckland,
New Zealand
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Appendix II

Information Sheet for Students

The Child Behavior Checklist: Establishing NZ norms

Dear Student

I am a psychology student at Massey University, hoping to finish my degree this year. In order to do so, I would like to ask you to participate in a study I am involved with.

The Child Behavior Checklist is a questionnaire that is used to measure the abilities and behaviors of kids that may have problems. So, I want to gather information on what children can do, and what problems they may have, and use this as a guide of what children in New Zealand can do, and how they usually behave. If we know how kids behave, and what they can do (their abilities), we will be able to help a kid that may not be doing so well.

This is what I will need from you, should you be prepared to take part in the study:

- Sign a form to say that you will take part in the study (give consent)
- Sign a form that says that you understand what I want to do, and what I ask of you
- Ask you parent(s) if they will be prepared to fill in a Parent Report Form
- Fill in a Report Form yourself. For this you will have to tick a box in a list of what you can do, and how you behave.

If you have any problems understanding what I want, you can phone me (tel. 09-446 0655), or send me an e-mail message (jeanne@xtra.co.nz), so that we can talk about the study!
Once I have finished the study, I will let you know if New Zealand kids behave in the same way, and can do the same things as American kids - if you want to know.

Regards,

Jeanne le Roux
Researcher

Janet Leathem
Supervisor

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Appendix III

Information Sheet for Parents

The Child Behaviour Checklist: Establishing NZ norms

Dear Sir/Madam

I am a student at Massey University, in the process of completing my master's degree. My thesis topic involves looking at the normal behaviours and competencies of New Zealand youngsters.

The Child Behaviour Checklist (CBCL) has been widely used to gather information on the behaviours and competencies of young people. The CBCL was developed in the US and it is important to determine its suitability for young New Zealanders. Gathering information on the usual behaviours and competencies of a broad group of New Zealand young people will result in reference data, which could be used to help us recognize dissimilar (problematic) behaviour in a child not coping. Appropriate help can then be provided. For this study, we are looking at the behaviour of young people at home (Parent Report Form) and at school (Teachers Report Form), as behaviour tends to change depending on where we are, and whom we interact with. The student will also complete a self-report form. The involvement of the teacher has nothing to do with school performance, and school records will not be accessed.

Your participation in the study would involve:

- Signing a consent form to indicate willingness for yourself and your child to participate.
- Completing a Parent Report Form for your child/ren, rating different behaviours and competencies at home. This will take approximately 20 - 25 minutes.
- Giving consent, with your child, that your child's teacher may complete the Teacher Report Form, rating different behaviours and competencies at school.

I would like to emphasize that this study requires establishing group norms and no individual performance will be identified. The aim of this study is to document a range of behaviour patterns for NZ youths, and then compare these with the US norms, currently being used.

Information gathered will be strictly confidential and anonymous. I will use codes to identify the participants, and destroy the information upon completion of the study. All gathered material will be stored in a locked safe, with only my supervisor, Janet Leathem, and myself having access to questionnaires. Please note that your non-participation will in no any way effect your child's schooling. Neither you, nor your child needs to take part if you do not want to. If you do take part in the study, you may withdraw at any time up to the point of having handed in the completed forms. You may decline to answer any particular questions on the questionnaire.

I have included a consent form and self-addressed envelope. If you feel comfortable with the aims of the study and would like to participate, please sign the form and return it to me. On receiving your consent form, I will contact you to make an appointment to have the Parent Report Form completed, and the questionnaire filled out. A research assistant will accompany me during home visits.

The Human Ethics Committee at Massey University, as well as your school's Board of Trustees has approved this study. If you have any questions regarding the study, please do not hesitate to contact me on 446 0655. Prof. Leathem can be contacted at the Massey University Psychology Clinic on 06-356 4131.

I would like to thank you in advance for your time and effort.

Jeanne le Roux
Researcher

Janet Leathem
Professor of Neuropsychology
Clinic Director

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

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Appendix IV

Information sheet for Teachers

The Child Behaviour Checklist: Establishing NZ norms

Dear {Teacher}

I am a graduate student at Massey University, in the process of completing my master's degree. For my thesis topic, I have chosen to look at the normal behaviour and competencies of New Zealand children. If more information is available on how children behave and what their abilities are, we are in a better position to help those who may experience difficulties.

The Child Behaviour Checklist (CBCL) has been widely used to gather information on the behaviour and competencies of children and adolescents. This measure was developed in the US and it is important to determine its suitability for young New Zealanders. Gathering CBCL information on the usual behaviours and competencies of a broad group of New Zealand children and adolescents would result in normative data, which could then be used as a referral point to assist the recognition of dissimilar (problematic) behaviour in other children. Behaviour recognised this way would go some way towards ensuring that the appropriate help was provided.

[Student's] parents have given permission for [Student] to participate in the study. Your responses are confidential and anonymous. Included with this letter is a Teacher Report Form. I would appreciate is greatly if you could complete the form and return it to me in the envelope provided. All information will be kept in a safe and results will be destroyed on completion of the study. Once results are written up, there will be no way you can be identified.

You have a right to decline participation. If you decide to participate, you have a right to refuse answering any particular question, or to withdraw from the study at any time up to the point of having handed in the completed questionnaire. You also have a right to ask questions, or discuss uncertainties. Should you have any questions, please do not hesitate to contact either myself on 09-446 0655, or my supervisor, Prof. Janet Leathem on 06-350 6131 at the Massey Psychology Clinic.

Thank you for your co-operation.

Jeanne le Roux
Researcher

Janet Leathem
Professor of Neuropsychology
Clinic Director

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
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North Shore Mail Centre,
Auckland,
New Zealand
Telephone: 64 9 443 9863
Facsimile: 64 9 443 9732

Appendix V

Principal/BOT Consent Form

The Child Behaviour Checklist: Establishing New Zealand Norms

I have read the information sheet and Jeanne has explained the study to me. I was allowed to ask questions about the study and understand its purpose.

I agree to allow participation of _____ School, under the conditions as explained in the information letter.

Signed: _____ Date: _____

Name: _____

I would like to receive a summery of the study results Yes / No (please circle one)

Please send a summary of the results to the following address:

_____

_____

_____

_____

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
Private Bag 102 904,
North Shore Mail Centre,
Auckland,
New Zealand
Telephone: 64 9 443 9863
Facsimile: 64 9 443 9732

Appendix VI

Student Consent Form

The Child Behaviour Checklist: Establishing NZ Norms

I have read the information sheet and Jeanne has explained the purpose of the study. I was allowed to ask questions, and I understand what this is about. I understand that I may ask further questions at any time.

I know that I have the right to withdraw from the study at any time up to the point of having handed in the completed form, or choose to not answer particular questions.

I agree to provide information to the researcher that is privafe and confidential, and that will be used for the purpose if this study only.

I agree to take part in this study, under the conditions as set out on the information sheet.

Signed: _____ Date: _____

Name: _____

I would like to receive summary information on the results of the study Yes / No (circle one)

Please send information to:

_____

_____

_____

_____

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
Private Bag 102 904,
North Shore Mail Centre,
Auckland,
New Zealand
Telephone: 64 9 443 9863
Facsimile: 64 9 443 9732

Appendix VII

Parent/Guardian Consent Form

The Child Behaviour Checklist: Establishing NZ norms

I have read the information sheet and understand the purpose of the study. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I understand that I am free to withdraw at any time up to the point of having handed in the completed forms, or to decline to answer any particular questions in the study.

I agree to provide the researcher with confidential information, to be used only for the purpose of the study.

I agree to participate in this study under the conditions set out on the information sheet.

I agree/do not agree (please cross out one) for my child's teacher to complete a Teacher Report Form.

Signed: _____ Date: _____

Name: _____

I would like to receive a summary of the results of the study Yes / No (circle one)

Please sent summary results to the following address:

_____

_____

_____

_____

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
Private Bag 102 904,
North Shore Mail Centre,
Auckland,
New Zealand
Telephone: 64 9 443 9863
Facsimile: 64 9 443 9732

Appendix VIII

Parental Permission Form

The Child Behaviour Checklist: Establishing NZ Norms

I, _____agree/do not agree (please circle one) for my son/daughter to take part in the study as detailed in the Information Letter.

Student's name: _____

Attending school: _____

Home Room Teacher: _____

Room Number: _____

Signed: _____ Date: _____

Phone number: _____

Massey University
COLLEGE OF HUMANITIES & SOCIAL SCIENCES

School of Psychology
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Auckland,
New Zealand
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Appendix IX

Teacher Consent Form

The Child Behaviour Checklist: Establishing NZ norms and comparing this with the US norms.

I have read the information sheet and understand the purpose of the study. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I understand that I am free to withdraw at any time up to the point of having handed in the completed forms, or to decline answering any particular questions in the study.

I agree to provide the researcher with confidential information, to be used only for the purpose of the study.

I agree to participate in this study under the conditions set out on the information sheet.

Signed: _____ Date: _____

Name: _____

School: _____

I would like to receive a summary of the results of the study Yes / No (circle one)

Please sent summary results to the following address:

_____

_____

_____

_____

APPENDIX X

Child Behavior Checklist for Ages 4-18

CHILD BEHAVIOR CHECKLIST FOR AGES 4–18

Please Print

For office use only
ID #

CHILD'S FULL NAME: FIRST MIDDLE LAST

SEX: ☐ Boy ☐ Girl

AGE

ETHNIC GROUP OR RACE

TODAY'S DATE: Mo. _____ Date _____ Yr. _____

CHILD'S BIRTHDATE: Mo. _____ Date _____ Yr. _____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

Please fill out this form to reflect *your* view of the child's behavior even if other people might not agree. Feel free to print additional comments beside each item and in the spaces provided on page 2.

PARENTS' USUAL TYPE OF WORK, even if not working now. *(Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK: _____

MOTHER'S TYPE OF WORK: _____

THIS FORM FILLED OUT BY:

☐ Mother (full name) _____

☐ Father (full name) _____

☐ Other—full name & relationship to child: _____

I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

☐ None

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

II. Please list your child's favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, singing, etc. (Do ***not*** include listening to radio or TV.)

☐ None

Compared to others of the same age, about how much time does he/she spend in each?

Compared to others of the same age, how well does he/she do each one?

	Don't Know	Less Than Average	Average	More Than Average	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams, or groups your child belongs to.

☐ None

Compared to others of the same age, how active is he/she in each?

	Don't Know	Less Active	Average	More Active
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include ***both*** paid and unpaid jobs and chores.)

☐ None

Compared to others of the same age, how well does he/she carry them out?

	Don't Know	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐
b. _____	☐	☐	☐	☐
c. _____	☐	☐	☐	☐

4-95 Edition

Please Print

V. 1. About how many close friends does your child have? (Do *not* include brothers & sisters) ☐ None ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours? (Do *not* include brothers & sisters) ☐ Less than 1 ☐ 1 or 2 ☐ 3 or more

VI. Compared to others of his/her age, how well does your child:

	Worse	About Average	Better	
a. Get along with his/her brothers & sisters?	☐	☐	☐	☐ Has no brothers or sisters
b. Get along with other kids?	☐	☐	☐	
c. Behave with his/her parents?	☐	☐	☐	
d. Play and work alone?	☐	☐	☐	

VII. 1. For ages 6 and older—performance in academic subjects. ☐ **Does not attend school because** _____

Check a box for each subject that child takes	Failing	Below Average	Average	Above Average
a. Reading, English, or Language Arts	☐	☐	☐	☐
b. History or Social Studies	☐	☐	☐	☐
c. Arithmetic or Math	☐	☐	☐	☐
d. Science	☐	☐	☐	☐
Other academic subjects – for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., etc. e. _____	☐	☐	☐	☐
f. _____	☐	☐	☐	☐
g. _____	☐	☐	☐	☐

2. Does your child receive special remedial services or attend a special class or special school? ☐ **No** ☐ **Yes—kind of services, class, or school:**

3. Has your child repeated any grades? ☐ **No** ☐ **Yes—grades and reasons:**

4. Has your child had any academic or other problems in school? ☐ **No** ☐ **Yes—please describe:**

When did these problems start?

Have these problems ended? ☐ **No** ☐ **Yes – when?**

Does your child have any illness or disability (either physical or mental)? ☐ **No** ☐ **Yes—please describe:**

What concerns you most about your child?

Please describe the best things about your child:

Below is a list of items that describe children and youth. For each item that describes your child ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of your child. Circle the ***1*** if the item is ***somewhat or sometimes true*** of your child. If the item is ***not true*** of your child, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to your child.

Please Print

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 1. Acts too young for his/her age
0 1 2 2. Allergy (describe): _____
_____
0 1 2 3. Argues a lot
0 1 2 4. Asthma
0 1 2 5. Behaves like opposite sex
0 1 2 6. Bowel movements outside toilet
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Cruel to animals
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Day-dreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys things belonging to his/her family or others
0 1 2 22. Disobedient at home
0 1 2 23. Disobedient at school
0 1 2 24. Doesn't eat well
0 1 2 25. Doesn't get along with other kids
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Eats or drinks things that are not food—***don't*** include sweets (describe): _____
_____
0 1 2 29. Fears certain animals, situations, or places, other than school (describe): _____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sounds or voices that aren't there (describe): _____
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, highstrung, or tense
0 1 2 46. Nervous movements or twitching (describe):
_____
_____
0 1 2 47. Nightmares
0 1 2 48. Not liked by other kids
0 1 2 49. Constipated, doesn't move bowels
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy
0 1 2 52. Feels too guilty
0 1 2 53. Overeating
0 1 2 54. Overtired
0 1 2 55. Overweight

56. Physical problems ***without known medical cause:***

0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe): _____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____

Please see other side

Please Print

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Plays with own sex parts in public
0 1 2 60. Plays with own sex parts too much
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older kids
0 1 2 64. Prefers being with younger kids
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Runs away from home
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe):
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Sets fires
0 1 2 73. Sexual problems (describe): _____
_____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Shy or timid
0 1 2 76. Sleeps less than most kids
0 1 2 77. Sleeps more than most kids during day and/or night (describe): _____
_____
0 1 2 78. Smears or plays with bowel movements
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Steals at home
0 1 2 82. Steals outside the home
0 1 2 83. Stores up things he/she doesn't need (describe): _____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Talks or walks in sleep (describe): _____
_____
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Thinks about sex too much
0 1 2 97. Threatens people
0 1 2 98. Thumb-sucking
0 1 2 99. Too concerned with neatness or cleanliness
0 1 2 100. Trouble sleeping (describe): _____
_____
0 1 2 101. Truancy, skips school
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses alcohol or drugs for nonmedical purposes (describe): _____
_____
0 1 2 106. Vandalism
0 1 2 107. Wets self during the day
0 1 2 108. Wets the bed
0 1 2 109. Whining
0 1 2 110. Wishes to be of opposite sex
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries

113. Please write in any problems your child has that were not listed above:

0 1 2 _____
0 1 2 _____
0 1 2 _____

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS.

UNDERLINE ANY YOU ARE CONCERNED ABOUT.

APPENDIX XI

Youth Self-Report for Ages 11-18

YOUTH SELF-REPORT FOR AGES 11–18

For office use only
ID #

Please Print

YOUR FULL NAME: FIRST MIDDLE LAST

YOUR SEX ☐ Boy ☐ Girl

YOUR AGE

ETHNIC GROUP OR RACE

TODAY'S DATE Mo. _____ Date _____ Yr. ____

YOUR BIRTHDATE Mo. _____ Date _____ Yr. ____

GRADE IN SCHOOL _____

NOT ATTENDING SCHOOL ☐

IF YOU ARE WORKING, PLEASE STATE YOUR TYPE OF WORK:

PARENTS' USUAL TYPE OF WORK, even if not working now *(Please be specific—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK: _____

MOTHER'S TYPE OF WORK _____

Please fill out this form to reflect *your* views, even if other people might not agree. Feel free to print additional comments beside each item and in the spaces provided on pages 2 and 4.

I. Please list the sports you most like to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

☐ None

	Compared to others of your age, about how much time do you spend in each?			Compared to others of your age, how well do you do each one?		
	Less Than Average	Average	More Than Average	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐

II. Please list your favorite hobbies, activities, and games, other than sports. For example: cards, books, piano, cars, crafts, etc. (Do ***not*** include listening to radio or TV.)

☐ None

	Compared to others of your age, about how much time do you spend in each?			Compared to others of your age, how well do you do each one?		
	Less Than Average	Average	More Than Average	Below Average	Average	Above Average
a. _____	☐	☐	☐	☐	☐	☐
b. _____	☐	☐	☐	☐	☐	☐
c. _____	☐	☐	☐	☐	☐	☐

III. Please list any organizations, clubs, teams or groups you belong to.

☐ None

	Compared to others of your age, how active are you in each?		
	Less Active	Average	More Active
a. _____	☐	☐	☐
b. _____	☐	☐	☐
c. _____	☐	☐	☐

IV. Please list any jobs or chores you have. For example: paper route, babysitting, making bed, working in store, etc. (Include ***both*** paid and unpaid jobs and chores.)

☐ None

	Compared to others of your age, how well do you carry them out?		
	Below Average	Average	Above Average
a. _____	☐	☐	☐
b. _____	☐	☐	☐
c. _____	☐	☐	☐

Please Print

V. 1. About how many close friends do you have? (Do *not* include brothers & sisters) ☐ None ☐ 1 ☐ 2 or 3 ☐ 4 or more

2. About how many times a week do you do things with any friends outside of regular school hours? (Do *not* include brothers & sisters) ☐ less than 1 ☐ 1 or 2 ☐ 3 or more

VI. Compared to others of your age, how well do you:

	Worse	About Average	Better	
a. Get along with your brothers & sisters?	☐	☐	☐	☐ I have no brothers or sisters
b. Get along with other kids?	☐	☐	☐	
c. Get along with your parents?	☐	☐	☐	
d. Do things by yourself?	☐	☐	☐	

VII. Performance in academic subjects. ☐ **I do not attend school because** _____

_____

Check a box for each subject that you take	Failing	Below Average	Average	Above Average
a. English or Language Arts	☐	☐	☐	☐
b. History or Social Studies	☐	☐	☐	☐
c. Arithmetic or Math	☐	☐	☐	☐
d. Science	☐	☐	☐	☐
Other academic subjects – for example: computer courses, foreign language, business. Do ***not*** include gym, shop, driver's ed., etc. e. _____	☐	☐	☐	☐
f. _____	☐	☐	☐	☐
g. _____	☐	☐	☐	☐

Do you have any illness, disability, or handicap? ☐ **No** ☐ **Yes—please describe:**

Please describe any concerns or problems you have about school:

Please describe any other concerns you have:

Please describe the best things about yourself:

Below is a list of items that describe kids. For each item that describes you ***now or within the past 6 months***, please circle the ***2*** if the item is ***very true or often true*** of you. Circle the ***1*** if the item is ***somewhat or sometimes true*** of you. If the item is ***not true*** of you, circle the ***0***.

Please Print **0 = Not True 1 = Somewhat or Sometimes True 2 = Very True or Often True**

0 1 2 1. I act too young for my age
0 1 2 2. I have an allergy (describe): _____
_____
_____
0 1 2 3. I argue a lot
0 1 2 4. I have asthma
0 1 2 5. I act like the opposite sex
0 1 2 6. I like animals
0 1 2 7. I brag
0 1 2 8. I have trouble concentrating or paying attention
0 1 2 9. I can't get my mind off certain thoughts (describe): _____
_____
_____
0 1 2 10. I have trouble sitting still
0 1 2 11. I'm too dependent on adults
0 1 2 12. I feel lonely
0 1 2 13. I feel confused or in a fog
0 1 2 14. I cry a lot
0 1 2 15. I am pretty honest
0 1 2 16. I am mean to others
0 1 2 17. I daydream a lot
0 1 2 18. I deliberately try to hurt or kill myself
0 1 2 19. I try to get a lot of attention
0 1 2 20. I destroy my own things
0 1 2 21. I destroy things belonging to others
0 1 2 22. I disobey my parents
0 1 2 23. I disobey at school
0 1 2 24. I don't eat as well as I should
0 1 2 25. I don't get along with other kids
0 1 2 26. I don't feel guilty after doing something I shouldn't
0 1 2 27. I am jealous of others
0 1 2 28. I am willing to help others when they need help
0 1 2 29. I am afraid of certain animals, situations, or places, other than school (describe): _____
_____
_____
0 1 2 30. I am afraid of going to school
0 1 2 31. I am afraid I might think or do something bad
0 1 2 32. I feel that I have to be perfect
0 1 2 33. I feel that no one loves me
0 1 2 34. I feel that others are out to get me
0 1 2 35. I feel worthless or inferior
0 1 2 36. I accidentally get hurt a lot
0 1 2 37. I get in many fights
0 1 2 38. I get teased a lot
0 1 2 39. I hang around with kids who get in trouble
0 1 2 40. I hear sounds or voices that other people think aren't there (describe): _____
_____
_____
0 1 2 41. I act without stopping to think
0 1 2 42. I would rather be alone than with others
0 1 2 43. I lie or cheat
0 1 2 44. I bite my fingernails
0 1 2 45. I am nervous or tense
0 1 2 46. Parts of my body twitch or make nervous movements (describe):
_____
_____
0 1 2 47. I have nightmares
0 1 2 48. I am not liked by other kids
0 1 2 49. I can do certain things better than most kids
0 1 2 50. I am too fearful or anxious
0 1 2 51. I feel dizzy
0 1 2 52. I feel too guilty
0 1 2 53. I eat too much
0 1 2 54. I feel overtired
0 1 2 55. I am overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feel sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe):
_____
_____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____
_____
_____
0 1 2 57. I physically attack people
0 1 2 58. I pick my skin or other parts of my body (describe): _____
_____
_____
0 1 2 59. I can be pretty friendly
0 1 2 60. I like to try new things
0 1 2 61. My school work is poor
0 1 2 62. I am poorly coordinated or clumsy
0 1 2 63. I would rather be with older kids than with kids my own age

Please see other side

0 = Not True 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 64. I would rather be with younger kids than with kids my own age
0 1 2 65. I refuse to talk
0 1 2 66. I repeat certain acts over and over (describe): _____
_____
_____
0 1 2 67. I run away from home
0 1 2 68. I scream a lot
0 1 2 69. I am secretive or keep things to myself
0 1 2 70. I see things that other people think aren't there (describe): _____
_____
_____
0 1 2 71. I am self-conscious or easily embarrassed
0 1 2 72. I set fires
0 1 2 73. I can work well with my hands
0 1 2 74. I show off or clown
0 1 2 75. I am shy
0 1 2 76. I sleep less than most kids
0 1 2 77. I sleep more than most kids during day and/or night (describe): _____
_____
_____
0 1 2 78. I have a good imagination
0 1 2 79. I have a speech problem (describe): _____
_____
_____
_____
0 1 2 80. I stand up for my rights
0 1 2 81. I steal at home
0 1 2 82. I steal from places other than home
0 1 2 83. I store up things I don't need (describe):
_____
_____
0 1 2 84. I do things other people think are strange (describe): _____
_____
_____
0 1 2 85. I have thoughts that other people would think are strange (describe): _____
_____
_____
_____
0 1 2 86. I am stubborn
0 1 2 87. My moods or feelings change suddenly
0 1 2 88. I enjoy being with other people
0 1 2 89. I am suspicious
0 1 2 90. I swear or use dirty language
0 1 2 91. I think about killing myself
0 1 2 92. I like to make others laugh
0 1 2 93. I talk too much
0 1 2 94. I tease others a lot
0 1 2 95. I have a hot temper
0 1 2 96. I think about sex too much
0 1 2 97. I threaten to hurt people
0 1 2 98. I like to help others
0 1 2 99. I am too concerned about being neat or clean
0 1 2 100. I have trouble sleeping (describe): _____
_____
_____
_____
0 1 2 101. I cut classes or skip school
0 1 2 102. I don't have much energy
0 1 2 103. I am unhappy, sad, or depressed
0 1 2 104. I am louder than other kids
0 1 2 105. I use alcohol or drugs for nonmedical purposes (describe): _____
_____
_____
_____
0 1 2 106. I try to be fair to others
0 1 2 107. I enjoy a good joke
0 1 2 108. I like to take life easy
0 1 2 109. I try to help other people when I can
0 1 2 110. I wish I were of the opposite sex
0 1 2 111. I keep from getting involved with others
0 1 2 112. I worry a lot

Please write down anything else that describes your feelings, behavior, or interests

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS

APPENDIX XII

Teacher's Report Form for Ages 5-18

Please Print

TEACHER'S REPORT FORM FOR AGES 5–18

For office use only
ID #

Your answers will be used to compare the pupil with other pupils whose teachers have completed similar forms. The information from this form will also be used for comparison with other information about this pupil. Please answer as well as you can, even if you lack full information. Scores on individual items will be combined to identify general patterns of behavior. Feel free to print additional comments beside each item and in the spaces provided on page 2.

PUPIL'S FULL NAME	FIRST	MIDDLE	LAST

PUPIL'S SEX ☐ Boy ☐ Girl	PUPIL'S AGE	ETHNIC GROUP OR RACE

TODAY'S DATE	PUPIL'S BIRTHDATE (if known)
Mo. _____ Date _____ Yr. _____	Mo. _____ Date _____ Yr. _____

GRADE IN SCHOOL	NAME AND ADDRESS OF SCHOOL

PARENTS' USUAL TYPE OF WORK, even if not working now *(Please be as specific as you can—for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)*

FATHER'S TYPE OF WORK: _____

MOTHER'S TYPE OF WORK _____

THIS FORM FILLED OUT BY:

☐ Teacher (full name) _____

☐ Counselor (full name) _____

☐ Other (specify position & give full name): _____

I. For how many months have you known this pupil? _____ months

II. How well do you know him/her? **1. ☐ Not Well** **2. ☐ Moderately Well** **3. ☐ Very Well**

III. How much time does he/she spend in your class or service per week?

IV. What kind of class or service is it? (Please be specific, e.g., regular 5th grade, 7th grade math, learning disabled, counseling, etc.)

V. Has he/she ever been referred for special class placement, services, or tutoring?

☐ Don't Know 0. ☐ No 1. ☐ Yes—what kind and when?

VI. Has he/she repeated any grades?

☐ Don't Know 0. ☐ No 1. ☐ Yes—grades and reasons

VII. Current school performance—list academic subjects and check box that indicates pupil's performance for each subject:

Academic subject	1. Far below grade	2. Somewhat below grade	3. At grade level	4. Somewhat above grade	5. Far above grade
1. _____	☐	☐	☐	☐	☐
2. _____	☐	☐	☐	☐	☐
3. _____	☐	☐	☐	☐	☐
4. _____	☐	☐	☐	☐	☐
5. _____	☐	☐	☐	☐	☐
6. _____	☐	☐	☐	☐	☐

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University of Vermont
1 South Prospect St.
Burlington, VT 05401

4-95 Edition

VIII. **Compared to typical pupils of the same age:**	1. Much less	2. Somewhat less	3. Slightly less	4. About average	5. Slightly more	6. Somewhat more	7. Much more
1. How hard is he/she working?	☐	☐	☐	☐	☐	☐	☐
2. How appropriately is he/she behaving?	☐	☐	☐	☐	☐	☐	☐
3. How much is he/she learning?	☐	☐	☐	☐	☐	☐	☐
4. How happy is he/she?	☐	☐	☐	☐	☐	☐	☐

IX. Most recent achievement test scores (optional).

Name of test	Subject	Date	Percentile or grade level obtained

X. IQ, readiness, or aptitude tests (optional).

Name of test	Date	IQ or equivalent scores

Does this pupil have any illness or disability (either physical or mental)? ☐ No ☐ Yes—please describe:

What concerns you most about this pupil?

Please describe the best things about this pupil:

Please feel free to write any comments about this pupil's work, behavior, or potential, using extra pages if necessary.

Please Print

Below is a list of items that describe pupils. For each item that describes the pupil ***now or within the past 2 months,*** please circle the ***2*** if the item is ***very true or often true*** of the pupil. Circle the ***1*** if the item is ***somewhat or sometimes true*** of the pupil. If the item is ***not true*** of the pupil, circle the ***0***. Please answer all items as well as you can, even if some do not seem to apply to this pupil.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 1. Acts too young for his/her age
0 1 2 2. Hums or makes other odd noises in class
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. Behaves like opposite sex
0 1 2 6. Defiant, talks back to staff
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
_____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Fidgets
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys property belonging to others
0 1 2 22. Difficulty following directions
0 1 2 23. Disobedient at school
0 1 2 24. Disturbs other pupils
0 1 2 25. Doesn't get along with other pupils
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Eats or drinks things that are not food—***don't*** include sweets (describe):_____
_____
0 1 2 29. Fears certain animals, situations, or places other than school (describe): _____
_____
0 1 2 30. Fears going to school
0 1 2 31. Fears he/she might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels or complains that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears sounds or voices that aren't there (describe):
_____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Would rather be alone than with others
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, high-strung, or tense
0 1 2 46. Nervous movements or twitching (describe):
_____
_____
0 1 2 47. Overconforms to rules
0 1 2 48. Not liked by other pupils
0 1 2 49. Has difficulty learning
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy
0 1 2 52. Feels too guilty
0 1 2 53. Talks out of turn
0 1 2 54. Overtired
0 1 2 55. Overweight
56. Physical problems ***without known medical cause:***
0 1 2 a. Aches or pains (***not*** stomach or headaches)
0 1 2 b. Headaches
0 1 2 c. Nausea, feel sick
0 1 2 d. Problems with eyes (***not*** if corrected by glasses) (describe):
_____
0 1 2 e. Rashes or other skin problems
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe):_____
_____
_____

Please see other side

Please Print

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

0 1 2 57. Physically attacks people
0 1 2 58. Picks nose, skin, or other parts of body (describe): _____
_____
0 1 2 59. Sleeps in class
0 1 2 60. Apathetic or unmotivated
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older children or youths
0 1 2 64. Prefers being with younger children
0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over; compulsions (describe): _____
_____
0 1 2 67. Disrupts class discipline
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe):
_____
_____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Messy work
0 1 2 73. Behaves irresponsibly (describe): _____
_____
0 1 2 74. Showing off or clowning
0 1 2 75. Shy or timid
0 1 2 76. Explosive and unpredictable behavior
0 1 2 77. Demands must be met immediately, easily frustrated
0 1 2 78. Inattentive, easily distracted
0 1 2 79. Speech problem (describe): _____
_____
0 1 2 80. Stares blankly
0 1 2 81. Feels hurt when criticized
0 1 2 82. Steals
0 1 2 83. Stores up things he/she doesn't need (describe):
_____
_____
0 1 2 84. Strange behavior (describe): _____
_____
0 1 2 85. Strange ideas (describe): _____
_____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Underachieving, not working up to potential
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Seems preoccupied with sex
0 1 2 97. Threatens people
0 1 2 98. Tardy to school or class
0 1 2 99. Too concerned with neatness or cleanliness
0 1 2 100. Fails to carry out assigned tasks
0 1 2 101. Truancy or unexplained absence
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses alcohol or drugs for nonmedical purposes (describe): _____
_____
0 1 2 106. Overly anxious to please
0 1 2 107. Dislikes school
0 1 2 108. Is afraid of making mistakes
0 1 2 109. Whining
0 1 2 110. Unclean personal appearance
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worries

113. Please write in any problems the pupil has that were not listed above:

0 1 2 _____
0 1 2 _____
0 1 2 _____

PLEASE BE SURE YOU HAVE ANSWERED ALL ITEMS