

**AN INVESTIGATION INTO THE INITIAL VALIDITY OF THE
CANTERBURY BEHAVIOUR SCREENING PROTOCOL (CBSP): A
PILOT STUDY**

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Abstract

This study was a pilot investigation of the initial validity of a newly developed behaviour -screening instrument for early intervention service providers. Group Special Education, Early Intervention (GSE/EI) (2005) adapted the *Canterbury Behaviour Screening Protocol* (CBSP) from a widely used behaviour- screening instrument the *Early Screening Project*.

The *CBSP* consisted of 49 items in 2 checklists. GSE/EI identified 10 early childhood centres with a total roll of 712 to participate in the study. Staff were asked to categorise children's problem behaviours as either withdrawn/isolated or aggressive/oppositional, using profiles provided. Next, they were asked to nominate 2 children in each category, and an additional 2 children in either category, and to rank them from most concerning to least concerning. Centres identified 25 children in the withdrawn/isolated category, and 28 children in the aggressive/oppositional category. Staff completed checklists for children with parent/carer consent, which were scored according to preset protocols. Scores on the *CBSP* were assigned risk values ranging from "extreme" to "no risk". The estimated prevalence of "high" to "extreme" behaviour problems was 7.2% based on CBSP protocols and teacher nominations. The level of agreement between teacher rank and *CBSP* score was 79%, and this determined the initial specificity.

Next, independent observations of the behaviour of the nominated children were conducted during free play periods at the centres by an observer blind to the children's nominated category, teacher ranking or checklist score. Risk levels were assigned based on the observation scores, using a cut-off value of 37% time spent in problem behaviour for girls and 40% for boys. There was agreement in terms of

teacher rank and observation scores, (categorised into either “no risk” and “at/high/extreme risk) for 65% for children in the withdrawn/isolated category, and 75% for children in the aggressive/oppositional category. The level of agreement between the *CBSP* score and the observations (categorised into either “no risk” or “at/high/extreme” risk) was 40% for children in the withdrawn/isolated category, and 46% for children in the aggressive/oppositional category.

Using the cut-off values, a prevalence estimate for high risk or extreme risk for behaviour disorders, based on independent observation of children, was 3.2%.

Centre staff completing a feedback form determined the social validity of the *CBSP*. Although responses were generally favourable, a number of suggestions were also made to improve the procedure.

Despite limitations in the design of the draft, the *CBSP* shows promise for a first step in a screening procedure designed to screen New Zealand early childhood centres for children who may be at risk for developing behaviour and/or social emotional problems. The independent observation may also be useful as a second step, prior to extensive eligibility assessment. A number of suggestions were made for future drafts such as addressing the limitations specified, conducting the *CBSP* with a greater number of children, and determining the concurrent validity, and test-retest reliability.

Chapter 1

Introduction

It was announced in the 2004 New Zealand budget; an extra \$307 million over the next 4 years would be allocated to early childhood education to make it accessible and affordable to families (ECE Funding Changes, Ministry of Education, 2004). Some of this funding has been specifically allocated to deliver greater quality early childhood education, by lifting teacher qualifications and reducing adult to child ratios (ECE Funding Changes, Ministry of Education, 2004). From 1 July 2007, it was announced that all three and four year old children in New Zealand are to receive 20 hours of free early childhood education per week in a teacher-led centre (ECE Funding Changes, Ministry of Education, 2004). This is part of the first instalment in delivery on *Pathways to the Future: Nga Huarahi Arataki* – a ten-year strategic plan for Early Childhood Education, and is a step towards the Labour Government's vision of low cost early childhood education for all New Zealand Children (ECE Funding Changes, Ministry of Education, 2004). These funding changes make it likely that there will be an influx of children into New Zealand early childhood centres and a subsequent increase in the number of children being referred to early intervention services, which is likely to create a huge strain on resources.

There has been an increase in the number of children in New Zealand who have behaviour problems that affect their learning and development, in particular how they relate to others in social contexts (Fraser and Moltzen, 2000). According to the New Zealand Ministry of Education (2003), in one year, Resource Teachers of Learning and Behaviour work with 6,473 children with behaviour problems and 6,077 children with both behaviour and learning problems, with additional children served by

Behaviour Support teams. In many early childhood centres there are only about 3 teachers to approximately 40 children. Bourke (2002) reported that many centres were not coping with the number of children with behaviour problems, as these children require so much teacher attention it makes it difficult to teach all children at a centre. The anticipated influx of more children with behavioural problems will make it even more difficult for centres to cope.

Currently, when a child is exhibiting concerning externalising or internalising behaviours, they are either referred to Group Special Education, Early Intervention, or are undetected and go unaddressed by service systems. There is often a long waiting list for services, meaning that by the time children are detected by parents or teachers, referred for services and assessed, it may be more difficult or too late for professionals to address the problem effectively with an appropriate intervention. After a referral is made, several professionals visiting the child's early childhood centre and home usually assess children. After this process, some children who meet strict eligibility criteria will receive an intervention, but many children often do not meet the criteria to receive services, meaning resources are wasted on unnecessary assessment, which reduces resources available to those with the most need. Due to the budget announcements in 2004, a greater number of children are likely to be referred for special education services due to the likely influx of children into centres. This is likely to mean longer waiting lists, and more unnecessary assessment procedures.

According to Carter, Briggs-Gowan and Davis (2004), evidence has indicated that screening for social-emotional and behavioural problems in early childhood is both feasible and is effective in improving rates of referral for mental health services. A brief, low cost, reliable and valid screening instrument that is easy to administer and score and can be used in early childhood settings may be an effective alternative

to the current system used in New Zealand. The introduction of a screening system in New Zealand early childhood centres could be used to ensure that the children with the highest need are being identified and resources are going to these high need children instead of resources being used in costly and time-consuming assessment of children that do not end up meeting the criteria for services. According to Bourke (2002), it is also necessary to have a fair and transparent system for identifying children, to avoid problems and conflicts when it may appear that certain families, neighbourhoods or sectors are more able to access services.

According to Carter et al. (2004), a multiple-step procedure is a cost-effective method of screening large groups of children. Usually the first step would involve an early childhood teacher screening all children in a centre using a brief, relatively inexpensive tool to identify children at an increased risk for social-emotional and behavioural problems. The children who are identified would then be referred for a second more comprehensive screening such as an observation by a trained assessor from Group Special Education, Early Intervention. This step may also include questioning the children's parents about their child's behaviour at home and in other settings. Children who are still deemed at an increased risk for social-emotional or behavioural problems after the second step will be referred for extensive assessment by GSE.

The current study firstly reviews the most commonly used screening instruments for infants, toddlers and preschoolers commonly used in New Zealand and in the United States and considers the empirical evidence for their reliability and validity. The second part of the study describes a pilot study of the *CBSP*, an adaptation of the *Early Screening Project (ESP)* (Walker et al., 1995) screening procedure for children

aged 3 to 5 years adapted for use in New Zealand early childhood centres by
Canterbury GSE Early Intervention.

Chapter 2

Literature Review

Early Intervention service providers in Canterbury currently have no standard referral process of determining the children who are most in need of behaviour services. Instead, early childhood teachers or parents can refer children by contacting a service provider. However, not all teachers or parents currently use this method, meaning many children that may require services will not receive them. Children who are referred to Group Special Education, Early Intervention, undergo a time-consuming, and costly assessment process to determine whether they meet the criteria for services. Many referred children do not meet the criteria for services meaning resources are wasted on these unnecessary assessment processes, instead of going to the children with the most need. Hence, early intervention service providers are interested in exploring a screening protocol for early childhood centres that is both time- efficient and cost- effective.

Several articles formed the basis for this review, and the instruments identified were selected from 3 review articles, as the instruments reviewed were recent and well established. Printz, Borg and Demaree (2003) reviewed 6 standardized behaviour and social –emotional screening tools that meet the performance standard requirements of the Head Start programme in the United States. Squires (2003) reviewed 5 screening instruments recommended for the early identification of social-emotional problems in early childhood. In addition, Carter and Fieldsend (2005) reviewed 15 screening instruments currently used in screening in New Zealand.

The following literature review gives a brief summary of 9 social-emotional and/or behaviour-screening instruments designed for children ranging in age from 6-months to 18 years. These are: the *Ages and Stages Questionnaires: Social Emotional*

(ASQ: SE), the *Brief Infant and Toddler Assessment (BITSEA)*, the *Strengths and Difficulties Questionnaire (SDQ)*, the *Temperament and Atypical Behaviour Scale (TABS)*, the *Preschool and Kindergarten Behaviour Rating Scales (PKBS)*, the *Toddler Behaviour Screening Inventory (TBSI)*, the *Social Skills Rating System (SSRS)*, the *Adjustment Scales for Preschool Intervention (ASPI)* and the *Early Screening Project (ESP)*. In addition, a description of the scoring is given, along with sample items on the instruments. A description of studies that have been conducted on the instruments is given, along with the available reliability and validity data. For all instruments the reference standard by which each instrument was compared was a figure of 0.80 for both reliability and validity. This figure was selected, as 0.80 is the standard that screening instruments should meet, in accordance with the American Psychological Association (Salvia & Ysseldyke, 2004).

Ages and Stages Questionnaires: Social-Emotional (ASQ: SE).

The *Ages and Stages Questionnaires: Social-Emotional* was developed as an addition to a general developmental screening tool for children aged from 6 months to 5 years of age (Squires, Bricker, Heo and Twombly, 2001). According to Squires et al. (2001), the general developmental screening tool reliably identifies children who may have developmental delay, but does not specifically identify children who may need further assessment in terms of their social-emotional competence. Squires et al. (2001) reports the *ASQ: SE* was developed after an extensive review of the literature and after experts in the early childhood field and parents had reviewed the content and suggested revisions and additions. The *ASQ: SE* was designed as a screening tool for social-emotional problems for children aged between 6 and 60 months (Squires et al., 2001). There are eight *ASQ: SE* questionnaires in total for the 6, 12, 18, 24, 36, 42 and 60 months intervals. Squires et al. (2001) designed the *ASQ: SE* to be completed

by parents, teachers and other caregivers, and to take about 10 to 15 minutes to complete, and 1 to 3 minutes to score.

Squires et al. (2001) states the focus of the *ASQ: SE* is on children's social and emotional competence and problem behaviours in the areas of self-regulation, compliance, communication, adaptive behaviours, autonomy, affect and interactions with people. An example of an item targeting social-emotional competence is "Does your child like to be picked up and held?" and an example of an item relating to problem behaviour is "Does your child have eating problems such as stuffing food, vomiting, or eating non-food items?" (Squires et al., 2001). Each item is followed by a series of four columns that parents can use to indicate whether their child does the item "most of the time", "sometimes", or "never or rarely", and a fourth column that allows parents to indicate with a tick if the behaviour is a concern to them (Squires et al., 2001). Parents' responses are given point values of 0, 5 or 10, and an extra 5 points given for behaviours that are a concern, with scores for each item combined into a total score.

In a study by Squires et al. (2001), 3014 participants between the ages of 3- to 63- months were recruited, using a variety of methods and across several US states. All parents of the children completed an *ASQ: SE*, and a random sample completed 1 of 2 equivalent measures to determine the concurrent validity (Squires et al., 2001). A random sample of parents also completed a second *ASQ: SE*, to determine test-retest reliability (Squires et al., 2001). Results of Squires (2001) study indicated the *ASQ: SE* had an overall test-retest reliability of 0.94. An overall sensitivity or ability of the *ASQ: SE* to detect atypical social-emotional development of 0.82 was found, as well as an overall specificity or the ability of the *ASQ: SE* to identify correctly typically developing children of 0.92 making an overall concurrent validity of 0.93 (Squires et

al., 2001). When the 0.80 standard for validity and reliability is applied, the test-retest, sensitivity and specificity correlations all exceed this standard, indicating the *ASQ: SE* is both a reliable and valid screening instrument.

A second study by Squires, Bricker and Twombly (2004) investigated the construct validity of the *ASQ: SE*, or the ability to distinguish between risk and disabilities groups, and to establish the relationship between gender and *ASQ: SE* scores. Parents of 2,479 children between 3- and 63 months from all regions of the United States completed the *ASQ: SE*, as well as a demographic form where gender, risk/disability status was indicated which was used to assign the children's data to one of four groups (Squires et al., 2004). The purpose of the groups was to generate a statistical method to investigate whether the *ASQ: SE* (Squires et al., 2004) could identify differences between groups consisting of high- risk children for developing social-emotional and/or behavioural problems and children with disabilities. The authors expected the children presenting with either risk or disability could be expected to achieve lower scores on the *ASQ: SE*. The children's data was divided into a no/low risk group, where either zero or one risk factor was indicated (for example low income), or a risk group, if two or more risk factors were indicated (for example having a teen mother). The two other groups were a developmental disability group, if eligible for the Individuals with Disabilities Education Act (IDEA) services, or a social emotional disability group, if eligible for IDEA services (Squires et al., 2004). According to Squires et al. (2004), their study indicated a strong relationship between children's performance on the *ASQ: SE* and their risk disability status, as indicated by the mean scores of the groups (Squires et al., 2004). The no/low risk group had the lowest mean score on the *ASQ: SE* and the risk group had the next lowest mean score. The developmental disability group had higher mean scores,

which indicated the presence of more social-emotional problems, and the social-emotional disabilities group presented with the highest mean score on average, indicating this group had the greatest number of social-emotional and/or behaviour problems (Squires et al., 2004). According to Squires et al. (2004), findings from the gender comparison component of their study provided some support for the validity of the *ASQ: SE*, as the boys had higher mean scores than girls of the same age indicating more problem behaviours, which is consistent with the male-female differences reported in the literature (Squires et al., 2004).

Further support that the *ASQ: SE* is both a reliable and valid measure is indicated in an independent review. Printz et al. (2003) reported that the test/retest reliability and overall agreement validity of the *ASQ: SE* as 0.94 and 0.93 respectively, which are above the 0.80 standard for reliability and validity.

The Brief Infant-Toddler Social Emotional Assessment (BITSEA).

The *Brief Infant-Toddler Social Emotional Assessment (BITSEA)* (Briggs-Gowan, Carter, Irwin and Wachtel, 2004) is a screening instrument for children aged between 12 and 36 months, and can be used by both parents and child-care providers. According to Briggs-Gowan et al. (2004), the *BITSEA* was developed in 2000, due to their perceived lack of a reliable and brief valid screener that measures social-emotional/behavioural problems, autism spectrum disorders and delays in social-emotional competence in early childhood. The *BITSEA* was developed from a companion assessment, as the authors believed that although the companion measure demonstrated good reliability and validity, it had 169 items, which they considered too long to be used in screening. According to Briggs-Gowan et al. (2004), the *BITSEA* was developed by a panel of 12 infant mental health specialists who selected 42 items from the dimensions contained in the companion assessment. Sample items

from the *BITSEA* include, “is restless and can’t sit still”, “does not make eye contact”, and “is affectionate with loved ones” (Briggs-Gowan et al., 2004). Items are rated on five response categories: rarely, sometimes, often, do not know, and refused, which are summed, and according to Briggs-Gowan et al. (2004), can be scored in approximately five minutes by hand or 3 minutes by computer programme.

A study by Briggs-Gowan et al (2004) investigated the reliability and validity of the *BITSEA*, by recruiting participants who varied in terms of socio-economic status and ethnicity. Parents of 1,237 children aged between 12 and 36 months were asked to complete both the *BITSEA* and the companion assessment for comparison between the two. The concurrent and discriminative validity was investigated by parents completing an equivalent behaviour screening measure, as well as an unrelated vocabulary measure (Briggs-Gowan et al., 2004). A follow-up study was conducted one year later with identical procedures to the original study (Briggs-Gowan et al., 2004). After participating in the initial procedure, 173 parents and children also participated in a home visit sub study, which involved an experimenter taking a videotaped developmental evaluation of the child to make independent ratings of the children’s behaviour (Briggs-Gowan et al., 2004). In the sub-study, parents also completed an interview about their child’s adaptive behaviour and completed a second companion measure to determine the test-retest reliability (Briggs-Gowan et al., 2004). Second parents and childcare providers were also asked to complete a companion in order to determine inter-rater reliability (Briggs-Gowan et al., 2004). According to Briggs-Gowan et al. (2004), the *BITSEA* demonstrated a test-retest reliability of 0.87 and an inter-rater reliability of 0.68. In terms of concurrent validity, the *BITSEA* detected 80% to 95% of children identified on the equivalent measure as having social-emotional and/or behaviour problems. Briggs-

Gowan et al. (2004) also reported the *BITSEA* displayed false positive rates below 30%, and evidence for discriminative validity, as low scores on the *BITSEA* showed low to moderate correlations with scores on the unrelated vocabulary measure.

The test-retest correlation of the *BITSEA* (Briggs-Gowan et al., 2004), meets the 0.80 standard, but this is not met by the lower inter-rater correlation of 0.68. In addition, the reported concurrent validity of the *BITSEA* meets the 0.80 standard (Briggs-Gowan et al., 2004), but the specificity of 0.70 does not.

Strengths and Difficulties Questionnaire (SDQ).

The *Strengths and Difficulties Questionnaire (SDQ)* (Goodman, 1997), is a brief behavioural screening questionnaire for children aged 4 to 16 that aims to provide information about children and young people's behaviours, emotions and relationships. The *SDQ* was developed from a series of parent and teacher questionnaires developed in 1967, which were considered by Goodman (1997) to be long-established and respected behavioural screening questionnaires that demonstrated adequate reliability and validity. However, Goodman (1997) considered these questionnaires to be dated, as the items referred to negative behaviours whereas the current trend in education is to emphasize children's strengths. Goodman (1997) also made criticisms of the questionnaires due to many behavioural items of current interest in education, such as acting prosocially were poorly covered and criticized the fact that there was no questionnaire for older children to complete themselves (Goodman, 1997). Goodman (1997) developed the *SDQ* to address these issues by initially selecting items from the original questionnaires and then adapting the items by conducting informal trials and obtaining advice from his colleagues.

The resulting *SDQ* (Goodman, 1997) had 25 items, 10 considered strengths, 14 considered difficulties and 1 neutral item. The 25 items were divided equally into 5

scales: hyperactivity, emotional symptoms, conduct problems, peer problems and prosocial (Goodman, 1997). An example of a strength item on the *SDQ* is “kind to younger children” and an example of a difficulties item is “constantly fidgeting or squirming” (Goodman, 1997). Each item can be rated “not true”, “somewhat true”, or “certainly true”, and the scores for the scales except the prosocial scale are summed to get a total difficulties score with a score of 0 being the lowest and 40 being the highest (Goodman, 1997). Three versions of the *SDQ* exist: the self-report for ages 11 to 17, the parent and teachers form for ages 4 to 10, and the parent and teacher form for ages 11 to 17 years (Goodman, 1997).

A study by Goodman (1997) aimed to investigate the concurrent validity of the *SDQ*, by comparing the *SDQ* and the original parent and teacher questionnaires. Parents and teachers of 403 children were recruited from either a high- risk psychiatric clinic or a low-risk dental clinic and completed both instruments scores were used to determine how the *SDQ* discriminated between the two groups in comparison to the parent and teacher questionnaires which Goodman (1997) believed have well-established reliability and validity. According to Goodman (1997), both the parent-completed instruments correctly identified 0.87 of the children as belonging to either the high-risk or low-risk sample, which showed no significant difference between the two instruments. In terms of the teacher-completed instruments, the *SDQ* correctly discriminated 0.85 of the children as belonging to either the high-risk or low-risk sample in comparison to the original parent and teacher questionnaire, which correctly discriminated 0.84 of the children, again showing a non- significant difference between the instruments (Goodman, 1997). In Goodman’s (1997) study, the sensitivity and specificity both exceed the 0.80 standard, indicating that the *SDQ* (Goodman, 1997) shows adequate validity.

A study by Goodman and Scott (1999) further investigated the concurrent validity of the *SDQ* by comparing it to an equivalent behaviour screening measure. According to Goodman and Scott (1999), the equivalent measure and the original parent and teacher questionnaires were of comparable predictive validity, as was the *SDQ* and the original parent and teacher questionnaires. Goodman and Scott (1999) therefore reasoned that the equivalent measure and the *SDQ* were also highly correlated and of comparable predictive validity, even though the equivalent measure was significantly longer in length than the *SDQ*. The participants were 132 children aged 4 to 7 years who were recruited from a high-risk psychiatric clinic or a low-risk dental clinic. Mothers of the children completed both a *SDQ* and the equivalent measure (Goodman and Scott, 1999). Results indicated that the *SDQ* correctly discriminated 0.93 of the children into either the high or low risk sample groups, and in comparison, the equivalent measure correctly classified 0.92 the children into their respective groups (Goodman and Scott, 1999). According to Goodman and Scott (1999), as there was no significant difference between the correlations between the two questionnaires, the results indicated they could equally discriminate between the children drawn from high-risk and low-risk samples, despite the *SDQ* only being approximately one-fifth the length of the equivalent measure (Goodman and Scott, 1997).

The correlations of 0.93 and 0.92 obtained in Goodman and Scott's (1999) meet the standard of 0.80. In addition, in an independent literature review by Carter and Fieldsend (2005), the sensitivity of the *SDQ* (Goodman, 1997) was reported to be 0.63 and the specificity is reported to be 0.95 after an evaluation was conducted. The specificity of 0.95 is higher than the 0.80 standard, but the lesser sensitivity correlation of 0.63 does not meet this standard.

The Temperament and Atypical Behaviour Scale (TABS).

The *Temperament and Atypical Behaviour Scale (TABS)* was authored by Neisworth, Bagnato, Salvia and Hunt and published in 1999 (Gomez and Baird, 2005). The *TABS* is an observation rating system, which aims to assess, and classify problems with self-regulatory behaviour in children aged 11 to 71 months (Gomez and Baird, 2005). The 15- item *TABS* Screener is used in addition to the longer and more detailed *TABS* Assessment Tool, which contains 55-items. According to Gomez and Baird (2005), the items on the *TABS* were developed from a review of the literature on several disorders of infancy and early childhood, and the items aim to reflect children's real behaviour in family contexts. The *TABS* contains four categories "detached", "hypersensitive/active", "underreactive", and "dysregulated" which according to Gomez and Baird (2005), correspond to the four types of regulatory disorders. Sample items from the *TABS* include "emotions don't match what's going on", and "gets angry too easily" (Gomez and Baird, 2005). The *TABS* is scored by teachers or caregivers ticking either "yes" or "no", depending if the self-regulatory item is currently a problem for the child, and the scores for each of the four categories are added to give a *TABS* "Temperament and Self-Regulatory Index (TRI) Score" (Gomez and Baird, 2005). A score from 0 to 4 indicates a child is likely to be not at risk for developing a self-regulatory disorder, a score from 5 to 9 indicating a child may be at risk, and a score of 10 or more indicates a child may already have problems with their self-regulation. According to Squires (2003), the *TABS* Screener can be completed in about 5 minutes and the *TABS* Assessment Tool in about 15 minutes.

The *TABS* was developed over a five-year period, with a standardization sample of approximately 200 children with disabilities, and 600 children without disabilities

(Squires, 2003). The participants were who recruited from several agencies in the USA and Canada (Gomez and Baird, 2005). In this standardization sample, the children with disabilities scored significantly higher on the *TABS* than the children without disabilities, which according to Gomez and Baird (2005) provides evidence for construct validity. The construct validity from the *TABS* standardization sample is reported in the *TABS* Examiners Manual as 0.72, meaning that 72% of children either with or at risk for self-regulatory problems who were identified by the *TABS Screener* as “at risk” were also identified by the more comprehensive *TABS* Assessment Tool as being “at risk” (Gomez and Baird, 2005). The percentage of false positives is reported in the *TABS* Examiners Manual as 1.4%, and the percentage of false negatives is reported as 2.2%.

The *TABS Screener* reported sensitivity of 0.72 does not meet the 0.80 standard, but the inter-rater reliability data reported as between 0.81 and 0.94 both in the *TABS Examiners Manual* and in an independent review by Printz, Borg and Demaree (2003) is of adequate standard. According to Squires (2003), studies comparing the *TABS* Screener with other equivalent screening instruments have not yet been reported.

The Preschool and Kindergarten Behaviour Rating Scale (PKBS).

The *Preschool and Kindergarten Behaviour Rating Scale (PKBS)* (Merrell, 1995) is a 76-item behaviour rating scale, which aims to measure both social skills and problem behaviours in children aged 3 to 6 years. The *PKBS* (Merrell, 1995) can be completed by parents or teachers and was developed due to Merrell’s (1995) perceived need for additional measures that assess the social, behavioural and emotional characteristics of young children. Merrell (1995) designed the *PKBS* to consist of items relating to the social-emotional development in early childhood,

which resulted in a 34-item “Social Skills Scale” and a 42-item “Problem Behaviour Scale”, which were developed after a review of the relevant literature. The *PKBS* (Merrell, 1995), “Social Skills Scale” includes the three subscales of "social cooperation", "social interaction" and "social independence". The *PKBS* (Merrell, 1995) “Problem Behaviour Scale” has separate “externalising” and “internalising” behaviour scales. The “externalising” scale has the subscales of “self-centre/explosive”, “attention problems/overactive” and “antisocial/aggressive” behaviours, and the “internalising” scale has “social/withdrawal”, and “anxiety/somatic” behaviours (Merrell, 1995).

Sample externalising items on the *PKBS* (Merrell, 1995) “Social Skills Scale” include “shares toys and other belongings”, and “follows rules”. Sample items on the *PKBS* (Merrell, 1995) “Problem Behaviours Scale” include “has temper tantrums or outbursts”, and “wants all the attention”. Items are rated on a 4-point scale: never, rarely, sometimes an often, and the *PKBS* (Merrell, 1995) is scored by adding the points and comparing the totals to the standard scores and percentiles provided in the *PKBS Examiners Manual* (Merrell, 1995)

A study conducted by Merrell (1995), consisting of 4 sub-studies, aimed to examine the convergent and divergent construct validity of the *PKBS* by comparing it to 3 other established behaviour-rating scales. A sample of 2,855 children aged 3-5 years who had been referred to a special education child find program across 16 US states, were rated by parents or teachers on the *PKBS* and on one of the equivalent measures (Merrell, 1995). According to Merrell (1995), the results indicated evidence for the convergent construct validity of the *PKBS*, as there were moderate to high relationships between the *PKBS* scores and comparable scores on the equivalent measures. Merrell (1995) also stated there was evidence for the

discriminant construct validity of the *PKBS* (Merrell, 1995) “Social Skills Scores” and the unrelated dimensions on the equivalent measures. There was also a negative relationship found between the *PKBS* (Merrell, 1995) “Problem Behaviour Scores” and the unrelated dimensions on the equivalent measures.

A further study by Holland and Merrell (1998) aimed to examine whether the *PKBS* (Merrell, 1995), could distinguish between 128 children either referred for early intervention or non-referred children. According to Holland and Merrell (1998), the results provided additional support for the construct validity of the *PKBS* (Merrell, 1995), as over two-thirds of the participants were correctly classified into their referred or non-referred group. An independent study by Canivez and Rains (2002) aimed to provide further evidence for the convergent and divergent construct validity of the *PKBS* (Merrell, 1995) by comparing it to an equivalent measure. According to Canivez and Rains (2002), the results provided evidence of convergent validity as the *PKBS* (Merrell, 1995) “Externalising Problems Scale” and the related dimension on the equivalent measure overlapped with 71% shared variance. According to Canivez and Rains (2002), divergent validity was also demonstrated as the *PKBS* (Merrell, 1995) “Externalising Problems Scale” and the unrelated dimension on the equivalent measure produced a near zero ($r = -.06$) correlation.

In an independent review by Printz et al. (2003), the test-retest and inter-rater reliability were reported to be between 0.62 and 0.87, and 0.36 and 0.63 respectively. The test-retest reliability upper correlation meets the 0.80 standard, but the lower value of 0.62 does not. In terms of inter-rater reliability, the range of 0.36 to 0.63 does not meet this standard. No validity correlations were reported by Printz et al. (2003).

The Toddler Behaviour Screening Inventory (TBSI).

The *Toddler Behaviour Screening Inventory (TBSI)*, developed by Mouton-Simian, McCain and Kelley (1997), is a 40-item checklist that aims to assess the frequency and intensity of toddler behaviour problems. According to its authors, the *TBSI* is easy to score and can be completed in 10 minutes. According to Mouton-Simien et al. (1997), the *TBSI* was developed due to a perceived lack of a brief screening instrument that could adequately measure a variety of behaviour problems unique to toddlers. Mouton-Simien et al. (1997) developed the *TBSI* by recruiting 181 mothers of children between the ages of 12 and 41 months. They were asked to list problem behaviours common to their children in several areas, including behaviour, temperament, sleeping, feeding, voiding/elimination, and medical and cognitive milestones. According to Mouton-Simien et al. (1997), additional *TBSI* items were generated through a review of the literature and the available toddler behaviour rating scales. The items were also evaluated by 10 professionals. These processes resulted in a 93-item checklist. Another 312 mothers were recruited and asked to rate the remaining items on a 3-point scale, (0 = not true, 1 = sometimes true, and 2 = very true), and whether considered the behaviour to be a problem for their child by indicating either “yes” or “no”, where items rated as “yes” were retained (Mouton-Simien et al., 1997).

A study by Mouton-Simien et al. (1997) provided initial reliability and validity data for the *TBSI*. Mothers of 581 toddlers aged between 12 and 41 months completed a *TBSI* and an equivalent behaviour screening measure. The concurrent validity was examined in this study by comparing the *TBSI* with an equivalent but much longer measure. According to Mouton-Simien, et al. (1997), a relatively strong correlation was found between the *TBSI* “Frequency Scale”, and the equivalent

measure, however, the *TBSI* “Problem Scale” and the equivalent measure were less highly correlated. The results provided evidence that the *TBSI* could identify children at risk for behaviour problems to an equal extent as a similar, but longer measure. They also examined test-retest reliability with a sample of mothers completing a *TBSI* and a second *TBSI* 2-weeks later. The results showed a test-retest correlation of 0.89 for the frequency scale, and 0.68 for the problem scale, which according to Mouton-Simien et al. (1997), indicated the *TBSI* was stable over the 2-week period. According to Salvia and Ysseldyke (2004), the acceptable standard for a test-retest reliability correlation on a behavioural screening instrument is 0.80 or above. When this standard is applied to the *TBSI* (Mouton-Simien et al., 1997), the correlation of 0.89 for the frequency scale meets this standard, but the 0.68 correlation for the problem scale does not.

A study by McCain, Kelley and Fishbein (1999) aimed to obtain additional data on the reliability and validity of the *TBSI* by extending its use to a clinical sample, and examining whether any differences across the children’s age groups and demographic factors existed. A sample of 312 mothers of toddlers was recruited from either a high-risk clinical group or a low-risk nonclinical group (McCain et al., 1999). Mothers were asked to complete a *TBSI*, an equivalent behaviour screening measure, and 4 questionnaires relating to several maternal risk factors (McCain et al., 1999). Moderate correlations were found between the *TBSI* and the equivalent measure providing some support for the concurrent validity of the *TBSI* (Mouton-Simien, McCain and Kelley, 1997). In terms of sensitivity, the *TBSI* was found to correctly classify 0.82 of the participants into their clinical and nonclinical groups (McCain et al., 1999). In addition, McCain, et al. (1999) reported that the inclusion of the maternal risk factors increased the correct classification of participants from 0.82 to

0.88 and the type and severity of the problem behaviours was found to vary depending on the age of the child.

The test-retest reliability was examined in this study when a sample of mothers completed a second *TBSI* (Mouton-Simien et al., 1997) 2-weeks later, with the results indicating a test-retest correlation of 0.83 for both the frequency and problem scales. When the 0.80 standard is applied to the *TBSI* (Mouton-Simien et al., 1997), the test-retest reliability of 0.83 adequately meets this standard.

The Social Skills Rating System (SSRS).

The preschool version of the *Social Skills Rating System* was authored by Gresham and Elliot, and published in 1990 (Fantuzzo, Holliday and McDermott, 1998). According to Fantuzzo et al. (1998), the *SSRS* is a relatively recent measure of social competence that aims to have a number of positive features, and consists of both a teacher version and a parent version. Fantuzzo et al. (1998), state that the *SSRS* was developed due to a perceived lack of social-competence screening instruments for preschool children that are appropriate in terms of children's both development and having adequate reliability and validity. In addition, Fantuzzo et al. (1998) believe many social competence measures are designed to identify negative behaviours associated with children at risk for social-competence problems, in comparison to identifying children's developmental strengths, which can be built upon to help the child become competent in other areas in which they may be having problems. Fantuzzo et al. (1998) believe a strength of the *SSRS* is how the majority of items describe positive social behaviours, instead of negative behaviours.

The *SSRS* consists of 40 items, which are presented as two domains of social competence, with 30 items on the "social skills scale", and 10 items on the "problem behaviours" scale (Fantuzzo et al., 1998). According to Fantuzzo, et al. (1998), the

items on the *SSRS* were developed by consulting the literature on social competence, and including issues the test developers thought represented everyday concerns faced by teachers. The *SSRS* “social skills scale” includes questions relating to the categories of “self-control”, “interpersonal skills” and “verbal assertion” (Fantuzzo, et al., 1998). A sample item from the three categories of the *SSRS* “social skills scale” includes “follows directions” “makes friends easily” and “expresses unfair treatment” respectively (Fantuzzo et al., 1998). The *SSRS* “problem behaviour scale” includes questions relating to externalizing and internalising behaviours (Fantuzzo et al., 1998). A sample item of an externalising behaviour on the *SSRS* “problem behaviours scale” is “temper tantrums”, and a sample item for an internalizing behaviour on this scale is “appears lonely” (Fantuzzo et al., 1998).

The reliability and validity of the published 40-item preschool version of the *SSRS* has not yet been determined (Fantuzzo et al., 1998). The data reported in the *SSRS* test manual was obtained from an earlier 60-item tryout teacher version, where 179 preschool children participated as a standardization sample (Elliot, Barnard and Gresham, 1989). The final published version differs in both length and content from the tryout version meaning, meaning the reliability and validity reported in the *SSRS* test manual is not likely to be correct (Fantuzzo et al., 1998). In an independent review of behavioural screening instruments by Printz et al. (2003), the reliability data reported is that of the tryout version. Printz et al. (2003) report the test-retest correlations of the teacher’s version of the *SSRS* (Gresham and Elliot, 1990) to be 0.85 for the “social skills scale” and 0.84 for the “problem behaviours scale”. Printz et al. (2003), also report the test-retest correlations for the parent version of the *SSRS* to be 0.87 for the “social skills scale” and 0.64 for the “problem behaviours scale”.

All of the reported test-retest reliability correlations meet the 0.80 standard, except the correlation for the parent version of the “problem behaviours scale”, which at 0.64 is below the 0.80 standard. The validity correlations for the tryout *SSRS* are not reported in Printz et al. (2003).

Fantuzzo et al. (1998) aimed to establish initial reliability and validity for the published preschool teachers version of the *SSRS*. The participants were 943 preschool children recruited from a Head Start programme, aged between 32 and 65 months. Results reported that the reliability and validity “externalizing” and “internalising” dimensions on the published *SSRS* “problem behaviours scale” were the same as those reported for the tryout version. However, according to Fantuzzo et al. (1998), items from the 3 categories from the tryout *SSRS* (e.g. “social skills scale” “self-control”, “interpersonal skills” and “self-assertion”) were not the same as the items on the published version, indicating that the two versions were not measuring the same dimensions. Fantuzzo et al. (1998) also reported the *SSRS* (Gresham and Elliot, 1990) “social skills scale” and “problem behaviours scale” did not serve as different sources of information about social competence and provide the same information. Fantuzzo et al. (1998) indicated that future studies on the *SSRS* are needed to establish the relationship between the *SSRS* “social skills scale” and the *SSRS* “problem behaviour scale”. According to Fantuzzo et al. (1998), the reliability and validity of both of the *SSRS* teacher and parent versions is yet to be established.

The Adjustment Scales for Preschool Intervention (ASPI)

The *Adjustment Scales for Preschool Intervention (ASPI)* (Noone-Lutz, Fantuzzo, and McDermott, 2002) is a measure of emotional and behavioural problems in preschoolers and is often used in early childhood education. According to Noone-Lutz et al. (2002), the *ASPI* was developed as an alternative to psychiatric checklists,

a widely used method of screening for emotional and behavioural problems in preschoolers. Psychiatric checklists have been criticised for being inappropriate for preschool children as they identify children's behaviour out of context, meaning only a list of a child's symptoms is gained. Noone-Lutz et al. (2002) do not believe the list of symptoms is adequate, as it does not give any information as to whether behaviours are isolated to specific contexts or circumstances. Thus, it is difficult to determine why a child is behaving in a concerning way, limiting the identification of an effective intervention (Noone-Lutz et al., 2002). According to Noone-Lutz et al. (2002), the validity of psychiatric checklists may not be accurate as evidence shows that early childhood teachers underreport emotional and behavioural problems in children to avoid giving children labels, which can be associated with negative effects for children.

The *ASPI* was developed from a companion measure designed to assess the behaviour of children aged 5 to 17 years, which involves teachers reporting adaptive and maladaptive behaviours that have occurred in their classrooms, over the previous two months (Noone-Lutz et al., 2002). The authors state that the *ASPI* was developed by a group of early childhood professionals reviewing the companion measure and identifying any of the items that should be either deleted or changed to fit the preschool setting, and suggesting any information that should be added to the *ASPI*. The completed *ASPI* contained 24 contextual situations framing 144 behavioural descriptors. In the *ASPI* behavioural descriptors, 22 descriptions of positive behaviour were included to allow teachers to identify children's behavioural strengths in addition to their needs. A sample of an *ASPI* contextual situation items is "how does this child cope with new learning tasks?" with choice behavioural descriptors including "has a happy-go-lucky attitude to every problem" and "won't even attempt

it if he/she senses a difficulty”. Low scores on the *ASPI* indicate no adjustment problems, whereas maladjustment problems are indicated by high scores (Noone-Lutz et al., 2002).

A study by Noone-Lutz et al. (2002) described the development of the *ASPI* and provided initial reliability and validity data, to determine whether the *ASPI* is appropriate for use in early childhood education programmes with low-income preschool children. Teachers of 829 children aged between 3.2 to 6.2 years participating in urban Head Start programmes were recruited for this study (Noone-Lutz et al., 2002). Teachers completed an *ASPI* and an equivalent measure regarding the amount and quality of children’s peer social interactions to determine concurrent validity. According to Noone-Lutz et al., (2002), evidence was demonstrated for the convergent validity of the *ASPI* as the “overactive” dimensions correlated significantly with the similar parts on the two equivalent measures. Noone-Lutz et al. (2002) also provided evidence for the divergent validity of the *ASPI*, with near zero correlations between the “under -activity” dimensions on the *ASPI* with the unrelated “overactive” measures on the two equivalent measures.

A further study by Bulotsky-Shearer and Fantuzzo (2004), examined the reliability and validity of the *ASPI*. The first part of Bulotsky-Shearer and Fantuzzo’s (2004) study investigated inter-rater reliability. Participants were teachers and teacher’s assistants of 199 children recruited from an urban Head Start programme (Bulotsky-Shearer and Fantuzzo, 2004). The teachers and teacher’s assistants completed an *ASPI* for each child (Bulotsky-Shearer and Fantuzzo, 2004). The results indicated that the teachers and teacher’s assistants’ ratings for all dimensions of the *ASPI* were significantly correlated with each other, ranging from 0.49 to 0.76, which do not meet the 0.80 standard.

A second study aimed to examine concurrent validity by comparing the *ASPI* with a direct observation measure of preschool behaviour problems (Bulotsky-Shearer and Fantuzzo, 2004). A sample of 50 children previously identified on the *ASPI* as being at risk for emotional and behavioural problems were observed for 30 minutes using the direct observation measure, as well as 50 comparison children (Bulotsky-Shearer and Fantuzzo, 2004). According to Bulotsky-Shearer and Fantuzzo (2004), the results showed further evidence for the convergent and divergent validity of the *ASPI* as the sample of children deemed “at risk” were also identified by the direct observation measure, whereas the comparison sample were not identified as at risk status by the observations.

Bulotsky-Shearer and Fantuzzo (2004) investigated the concurrent validity of the *ASPI* with teachers of a second sample of 227 children completing two measures, one regarding temperament and the other emotional regulation. Bulotsky-Shearer and Fantuzzo (2004) reported the results showed further evidence for the validity of the *ASPI* as the “overactive” dimensions of the *ASPI* were significantly correlated with the “emotional intensity” and “activity” temperament dimensions on the comparison measures. According to Bulotsky-Shearer and Fantuzzo (2002), this result is consistent with the literature, which suggests that overactive temperaments are associated with inattentive/hyperactive or aggressive problem behaviours in preschool children. Conversely, Bulotsky-Shearer and Fantuzzo (2002) state that there is a strong negative correlation between the under-active dimensions on the *ASPI* and the “adaptive” and the “approach/withdrawal” temperament dimensions on the two equivalent measures. Bulotsky-Shearer and Fantuzzo (2004) state this result is also consistent with the literature, which suggests children with inhibited or fearful

temperament styles are less likely to demonstrate adaptive social and emotional behaviours, and instead demonstrate behaviours, which are considered withdrawn.

The Early Screening Project (ESP)

The *Early Screening Project (ESP)* (Walker et al., 1995) is a three-stage, multiple-gated procedure used to screen for behaviour disorders in preschool children aged 3 to 5 years (Feil and Walker, 1995). According to Feil and Walker (1995), The *ESP* aims to assess both the frequency and intensity of behaviour problems and is designed to be used as a cost effective behaviour screening procedure in early intervention.

According to Walker et al. (1995), the *ESP* is adapted for preschool children from a companion measure, a multiple-gated screening procedure designed to identify school-age children at an increased risk for either externalising or internalising behaviour problems. The companion measure differs from traditional screening instruments in that it has three increasing gates or stages, which require teacher rankings and ratings, and with direct observations of behaviour (Feil et al., 1995). According to Feil et al. (1995), the companion measure has acceptable levels of accuracy, is cost efficient and has been received well by teachers who have used the procedure.

Feil et al. (1995) believe that *ESP* can be used as an alternative to the teacher-referred methods that are commonly used in schools, and the *ESP* was developed due to a perceived lack of instruments for the screening of behaviour problems in preschool children, over a 3-year period from 1991 to 1994. In developing the *ESP*, the developmental appropriateness for preschool children at each screening stage was considered, and any necessary changes were made including the cut-off criteria for

determining at-risk children, which was adjusted to take into account the behaviour levels of younger children.

The resulting *ESP* consisted of three steps or gates, where step one was based on teacher's nominations and rankings of the children in their centre (Feil et al., 1995). In step one of the *ESP*, teachers list and rank by severity the five children in their centre who best fit the description given in the *ESP* manual of externalising behaviours (Feil et al., 1995). Examples of externalising behaviours include aggressive, hyperactive and antisocial behaviour. Teachers also list and rank by severity the five children in their centre who best fit the description given of internalising behaviours, including shy, timid and isolated behaviours.

The *ESP* step two is reliant on the teacher ratings, with teachers completing four measures, which gives information about the type, frequency and severity of the behaviours exhibited by the nominated children (Feil et al., 1995). Teachers complete a "Critical Events Index", an "Aggressive Behaviour Scale", an "Adaptive Behaviour Scale" and a "Maladaptive Behaviour Scale" for the top three ranked children on the externalising dimension (Feil et al., 1995). Teachers also complete all measures except the "Aggressive Behaviour Scale" for the five students ranked on the internalising dimension as well as a "social interaction scale" (Feil et al., 1995). Children receiving scores above the cut-off point on the step two measures can pass to the optional *ESP* stage three (Feil et al., 1995).

The *ESP* step three involves the direct observation of a child's social behaviour on the playground, and the purpose is to independently confirm the teacher ratings in stage one and two (Feil et al., 1995). Children passing to stage three are observed for at least 10 minutes on a minimum of two separate days (Feil et al., 1995). The observer runs the stopwatch when the child being observed displays antisocial or non-

social behaviour and the observer stops the watch when the child displays prosocial behaviour (Feil et al., 1995). Walker et al. (1995) defines antisocial behaviour as occurring when a child is involved in negative interactions with another child, or not following the centre's rules, and non-social behaviour when a child is playing alone away from the other children. Walker et al. (1995) defines prosocial behaviour as occurring when a child is involved in positive interactions with another child, or engaging in playing parallel play. This procedure involves recording the total time the child is involved in either antisocial or non-social behaviour, which is then calculated as a percentage averaged over the two observations (Feil et al., 1995).

Beginning in 1991, studies investigated the reliability and validity of the *ESP*. According to Feil and Walker (1995), most of the inter-rater reliability coefficients for the *ESP* are at least 0.80. In an independent review by Printz et al. (2003), the inter-rater reliability is reported as 0.87 and 0.88, and the test-retest reliability is reported to be 0.72, which does not meet the 0.80 standard.

A study by Feil et al. (1995) investigated the reliability and validity of the *ESP* with 2,853 children aged 3 to 6 years who were enrolled in either general education or specialized classrooms. Feil et al. (1995) investigated the concurrent validity of the *ESP* by comparing it to two equivalent behaviour- screening instruments. The results Feil et al.'s (1995) study indicated a correlation 0.69, with one equivalent measure and a correlation of 0.80 with the other equivalent measure. Feil et al.'s (1995) study showed the *ESP* had sensitivity, or the percentage of true positives, to be 0.62 and specificity, or the percentage of true negatives, to be 0.94.

In 2000, Feil, Walker, Severson and Ball extended the research on the *ESP* by investigating cross-cultural characteristics and validity. According to Feil et al. (2000), the study was completed to provide research into screening instruments that

are appropriate for young children from culturally diverse backgrounds. Feil et al. (2000) recruited 954 children aged 3 and 4 from 40 Head Start classrooms, and teachers screened these children with step one ranking procedures, step two measures were completed on the nominated children along with a randomly chosen comparison boy and girl from each class (Feil et al., 2000). In Feil et al.'s (2000) study, teachers completed the *ESP* step two measures for the nominated children as well as 2 equivalent behaviour-screening measures. In addition, trained observers using a peer social behaviour observation procedure conducted observations, and 19% of parents were interviewed to obtain a better sense of the participant's neighbourhood characteristics, in particular, violence (Feil et al., 2000). The results of Feil et al.'s (2000) study showed the *ESP* and equivalent measures showed good agreement and a moderate inter-rater agreement was found. Feil et al. (2000) reported no significant differences were found in the number of referrals when using the *ESP* among varied ethnic groups, indicating the *ESP* is a suitable behaviour -screening instrument for many ethnic groups. The *ESP* is currently out of print, as a new instrument has replaced it. This version is not available in New Zealand.

Insert Table 1 (page 68)

*Summary Table of Psychometric Properties of Screening Instruments from
Independent Reviews*

Summary

Out of the 9 screening instruments reviewed, several exceed the 80% required standard for reliability and validity (Salvia and Ysseldyke, 2003). Even though some of these instruments are considered by this standard to be “excellent” statistically (Salvia and Ysseldyke, 2003), none are suited for use in Canterbury for a number of reasons. Firstly, these screening instruments were all designed for use in an overseas context, in which different behavioural expectations may apply. These instruments are not designed for the multiculturalism that must be accounted for in a context like Canterbury. Canterbury has a number of Maori, Pacific Island and Asian children attending early childhood centres, which is very unlikely to be the case overseas. The early childhood teacher training is also different between countries, meaning that the instruments are not written for Canterbury early childhood teachers who may not understand or realise the relevance of the overseas content. Many of the screening instruments are in checklist format, a format that is not generally used in Canterbury early childhood centres. The New Zealand early childhood curriculum *Te Whāriki* (Ministry of Education, 1996) is not an academic, or “school readiness” curriculum, so the content may not be appropriate for centres in Canterbury. The context for assessment in *Te Whāriki* (Ministry of Education, 1996) is Learning Disposition Assessment (Carr, 2001), which relates to children’s learning disposition, and is not aimed at behaviour. Because of these reasons none of the screening instruments described above are appropriate for use in Canterbury, hence a Canterbury protocol must be created.

Development of the CBSP

Group Special Education, Early Intervention selected the *Early Screening Project (ESP)* (Walker et al., 1995) as a model for the Canterbury protocol. A writing day was held in which Group Special Education, Early Intervention wrote the *CBSP* items, adapting them from the *ESP*. This resulted in the following materials: a centre booklet that was created to introduce the *CBSP* (GSE, 2005) as well as giving original, detailed instructions for the centres to complete the *CBSP*. In this booklet, teachers were given space to nominate the most concerning children from their centres that exhibited either “externalising behaviours”, or “internalising behaviours”, which matched profiles within the booklet. For step two of the protocol, a child booklet was also provided to obtain specific information about the nominated children’s behaviours, and contained the *Contextual Incidents Questionnaire*, and the *Behaviour Checklist*, which were created by the working party adapting the questionnaires from the *ESP* (Walker et al., 1995). In addition, this booklet also contained a form for the centre staff to complete an optional *Learning Disposition Assessment* (Carr, 2001) for the children if they wished. This booklet also contained a page for any relevant information about the nominated children such as their date of birth, and information about potential contributors to their concerning behaviours such as family or health issues.

In addition to these original items, step three of the protocol was unaltered from the *ESP* (Walker et al., 1995), and was designed for an independent researcher to evaluate the teacher’s nomination and ranking in stage one, and teacher responses to the questionnaires in stage two. The researcher conducted the *ESP: Direct Behaviour Observations* (Walker et al., 1995).

The current study was a pilot study, designed to investigate the initial validity of a newly designed screening instrument for Canterbury, the *Canterbury Behaviour Screening Protocol (CBSP)* (GSE, 2005). The *CBSP* (GSE, 2005) was not used, as an identification tool in this study, rather at this stage the focus of the research was to determine how the protocol worked and obtain a general idea of the social validity, or how the centres reacted to the protocol.

Chapter 3

Method

Research Hypothesis

That the children identified and ranked as showing the most concerning aggressive/oppositional or withdrawn/isolated problem behaviours in centres by teachers, will also receive the highest (most concerning) scores on the *CBSF* checklists. In addition, the highest teacher ranked children will also show the highest levels of aggressive/oppositional or withdrawn/isolated problem behaviours on the independent observations.

Recruitment

The University of Canterbury's Human Ethics Committee approved the procedures for recruitment and informed consent (Appendix 1). An introductory letter was sent by the Manager of Group Special Education, Early Intervention in Canterbury to selected early childhood centres. The letter introduced the people involved, and the purpose and procedures of the study. The letter also explained that the study had been approved by the University of Canterbury's Human Ethics Committee and assured complete confidentiality of data. If the centres consented to participate, the staff at each centre were provided with the study materials and an information letter from the researcher (Appendix 2).

Child Nomination and Parent Consent Process

The centre staff were asked (Appendix 3) to review the behaviour patterns of the children attending the centre, and mentally identify two children from their centre aged 2.5 to 5 years who most closely matched the "aggressive/oppositional"

behaviour profile, and two children aged 2.5 to 5 years that most closely matched the “withdrawn/isolated behaviour profile” as described in the *CBSP: Centre Booklet*

“Aggressive/oppositional” behaviours were defined as behaviours that are directed outwardly by the child toward the external social environment. Examples of “aggressive/oppositional” behaviours included were “has tantrums”, and “is hyperactive” (GSE, 2005). “Withdrawn/isolated” behaviours were defined as behaviours that are directed inward by the child away from the external social environment. Two examples of “withdrawn/isolated” behaviours included “does not talk to other children”, and “has low activity levels” (GSE, 2005)

Staff were additionally instructed to mentally identify the next two most concerning children in the centre aged 2.5 to 5 years matching either profile. A total of 6 children were expected to be nominated by each centre. Centre staff were asked to not nominate only one child on either behaviour profile. They were also asked to nominate 6 children even if they considered some of the children to have behaviours of less concern.

The centre staff were asked to discuss the study with the child’s parent or carer using the information sheet provided (Appendix 5). If the parent or carer consented an approved consent form (Appendix 5) was signed. If a parent did not consent to their child participating, the staff were asked to mentally identify the next most concerning child, until 6 were nominated by each centre.

Centre Characteristics

Group Special Education, Early Intervention, recruited ten early childhood centres as it was anticipated this would be the maximum number of centres from which the researcher could realistically collect data in the time available. Centres were selected to represent approximately even geographical distribution in the North,

South, East and West areas of Christchurch, to avoid a possible over-representation in lower socio-economic areas. Several centre types were selected to be representative of the range present in Christchurch, hence 4 Kindergartens, 3 preschools, 2 combination preschool and nurseries, and one childcare centre were included in the study. One Kindergarten declined to participate because they reported that they had no children with behaviour problems and another Kindergarten in the same geographic area was recruited. Nine centres nominated a total of 28 children as aggressive/oppositional and one centre (10) did not nominate any children in this category. Nine centres nominated a total of 25 children as withdrawn/isolated and one centre (5) did not nominate any in this category (Table 2).

Insert Table 2 (page 69)

Number and Category of Nominated Children

Subjects

Fifty-three children served as the subjects of the study. Their ages ranged from 30 to 60 months (mean = 45.74, SD = 8.78). There were 31 boys (58.5%) and 22 girls (41.5%). Children attended the centre for a mean of 22.39 hours per week (range 4-53; SD = 12.095), although attendance data was not reported for 6 children (Appendix 6). Centres reported on age 3 vision screening for 31 children, and all except one child passed. Of the 32 with reported results of the hearing screening, one did not pass. Health reports for 41 children show that 34 had zero problems, 5 had 1 problem, 3 had 2 problems and one child had 3 problems. The characteristics of each group are shown in Table 3.

Insert Table 3 (page 70)

Subject Characteristics by Nominated Category

Instrumentation

The measures in this study included teacher nomination rank, the *Canterbury Behaviour Screening Protocol (CBSP)* Contextual Incidents Questionnaire (CIQ) and Behaviour Index (BI) (GSE, 2005), and the *ESP: Direct Behaviour Observation Procedure* (DOP) (Walker et al., 1995). The *CBSP* (GES, 2005) was adapted from the *Early Screening Project (ESP)* (Walker et al., 1995) for use in Canterbury, New Zealand. The complete instrument is included as Appendices (3, 4 and 5, and its construction is described in Appendix 6).

Teacher Ranking.

Once six children had been mentally identified and parent or carer consent had been obtained for each child, centre staff were instructed to rank order the children within the category in which they had been nominated (i.e. “aggressive/oppositional” or “withdrawn/isolated” behaviour profiles). The teachers were asked to rank based on the intensity to which each child matched the profiles. The children were to be ranked from “most concerning” (#1) to “least concerning” (#2, #3 etc). The teacher nomination rank ranged from 1 to 3 for each profile category (i.e. “aggressive/oppositional and “withdrawn/isolated”). This procedure was used by Walker et al. (1995) in the development of the *ESP*. Teacher ranking is used as an independent measure of problem severity in the analysis of the *CBSP*.

CBSP: Contextual Incidents Questionnaire (CIQ.)

The CIQ (Appendix 4) consisted of 13 items presented in a format similar to a multi-choice test with a stem followed by descriptors. The centre staff were asked to select the best one descriptor for each item for each child. Within each item, one descriptor was synonymous with one critical event adapted from the *ESP*. For example, in the item that begins “how well does this child cooperate and show respect for others?” the descriptor that equates to a critical incident is “takes or damages others property intentionally”. In some items, there was more than one critical event descriptor. If a critical event descriptor was marked, a score of 1 point was given to that item. If any other descriptor was marked, a score of 0 was given to that item. The CIQ score was the total points accumulated.

CBSP: Behaviour Index (BI).

The BI (Appendix 4) included 36 items. Items were sorted into 4 scales for scoring: the “*Aggressive Behaviour Scale*” (ABS), the “*Social Interaction Scale*” (SIS), the “*Maladaptive Behaviour Scale*” (MABS) and the “*Adaptive Behaviour Scale*” (ADBS). The BI index and scoring profile is shown in Table 3. Each item consisted of a behaviour description, and was completed by marking on a 5 -point scale the extent to which the child’s behaviour matched the descriptor. A score of 1 indicated “not at all”, 2 “rarely”, 3 “sometimes”, 4 “most of the time” and 5 “almost all the time”. The centre staff were asked to complete the BI for all nominated children.

Insert Table 4 (page 71)

Item Distribution to Scales of the BI

The “*Aggressive Behaviour Scale*” (ABS) comprised 11 items. The ABS content was equivalent to the *ESP: Aggressive Behaviour Scale* (Walker et al., 1995).

However, some wording was changed to fit within the New Zealand context, and the New Zealand early childhood curriculum *Te Whāriki* (Ministry of Education, 1996).

The frequency score for 8 of the items was summed, and divided by the number of items to create a subscore. Item 9 (“is teased, neglected and/or avoided by peers”) was scored differently because it was rewritten to three separate items (i.e. “is teased/bullied by peers”, “is left out or unnoticed by peers”, and “peers actively avoid this child”). For scoring purposes, the mean score for the three items was calculated and this was added to the subtotal of the other 8 items. Thus, the score recorded was the equivalent of that on the *ESP: Aggressive Behaviour Scale*.

The “*Social Interaction Scale*” comprised 8 items adapted for the New Zealand context from the *ESP: Social Interaction Scale* (Walker et al., 1995). Items “volunteers for show and tell”, “freely takes a leadership role”, and “spontaneously works with a peer or peers on projects in class” (Walker et al., 1995) were reworded as the team believed these items would be unlikely to be typical in a New Zealand early childhood centre. These items were altered to “has a positive view of self”, “readily attempts new activities” and “displays anxious/ fearful behaviour in daily situations” (GSE, 2005). A score was calculated by summing the frequency indicators selected for each item and dividing by the total number of items. The score this produced was the equivalent of a score on the *ESP: Adaptive Behaviour Scale* (Walker et al., 1995).

The “*Adaptive Behaviour Scale*” consisted of 8 items. The content of the original *ESP: Adaptive Behaviour Scale* (Walker et al., 1995) was retained, but some wording was changed to fit with the New Zealand context and early childhood

curriculum *Te Whāriki* (Ministry of Education, 1996). A score for this scale was calculated as for the “*Social Interaction Scale*”.

The “*Maladaptive Behaviour Scale*” consisted of 9 items. It was similarly adapted from the *ESP: Maladaptive Behaviour Scale* (Walker et al., 1995). Scoring procedures were the same as described for the other scales.

ESP: Direct Behaviour Observation.

The *ESP: Direct Behaviour Observation* (DOB) was designed to provide direct observational assessment of a child’s behaviour in free play activities (Walker et al. (1995). The *ESP* observations were reported to be a reliable measure of behaviour problems (Walker et al., 1995). The procedure is to observe an individual child for 10 minutes during free play on two different days. A stopwatch is used to record the number of seconds the child is engaged in antisocial or non-social behaviour (Walker et al., 1995). Antisocial behaviour is defined as anti-social play with other children or not following the centre behaviour rules. Non-social behaviour was recorded when the child was tantrumming or involved in solitary play (Walker et al., 1995). Prosocial behaviour was observed during positive or parallel play with another child and when the child is following the centre rules for behaviour. The score is the percentage of the observed time the child was engaged in antisocial or non-social play, averaged over 2 observations (Walker et al., 1995).

Procedure

Early Intervention Teachers from Group Special Education, Early Intervention Canterbury delivered the study materials to the 10 participating early childhood centres and discussed the instructions with them. Centre staff telephoned and emailed questions or concerns they had about the project. Centre staff completed the

nomination and ranking procedure in the *Centre Booklet*, and completed a *Child Booklet* and posted the materials to the supervisor of the project. Each centre posted completed materials to the research supervisor. The supervisor provided the contact details of the centre, the times when the children would have free play, and the first names of the nominated children to the observer. The observer was experimentally “blind” to the child’s rank scale scores and whether they were nominated for the “aggressive/oppositional” or “withdrawn/isolated” behaviour profile.

Reliability

A second observer, a Masters student in Education, was recruited to conduct approximately 10% of the observations to determine the inter-rater reliability. The second observer trained independently until the *ESP* training criterion was achieved. The second observer observed 7 children on two occasions each (approximately 13% of the sample) at the same time and using the same procedure as the researcher. The second observer observed 2 children at a Kindergarten and 5 children at a preschool and nursery. The observers were instructed not to stand near each other or talk to each other during the observations to minimize influencing one another’s scores. The observer agreement ranged between from 33 seconds difference to 2-second difference. The total inter-rater agreement was 95%, which was above the 80% standard specified in the *ESP*.

Risk Scoring

In addition to the score calculated for each measure as described previously, a risk status score was determined for the CIQ, and the 4 subscales of the BI, using cut-off values provided in the *ESP* (Walker et al., 1995). The risk status ascribed are

scored as extreme (3), representing the scores at the 98th percentile and above, high (2), the 93rd to 97th percentile, at risk (1), the 82nd to 84th percentile, and no risk (0).

Score value cut-offs differ according to gender, nominated category and measure.

These score values and risk status are shown in Table 5.

Insert Table 5 (page 75)

Score Equivalent of Risk Status

Chapter 4

Results

Teacher Rankings

Within each category, centre staff ranked children from “most concerning” to “least concerning” [of those nominated], and the number nominated in each category ranged from 0-5. Centres 4, 6, 8 and 9 nominated 3 children in each category, and Centre 3 nominated 2 in each. Centre 2 nominated 4 in the aggressive/oppositional and 2 in the withdrawn/isolated category. Centre 5 and 7 nominated 5 children in the aggressive/oppositional category and 0 and 1 respectively in the withdrawn/isolated category, and Centre 10 did the reverse, nominating 5 in the withdrawn/isolated category and 0 in the aggressive/oppositional. (The nominations and rankings within each centre for each child are included in Appendix 7).

Gender

The number of boys and girls nominated on either the “aggressive/oppositional” or “withdrawn/isolated” category was determined. The purpose of determining gender difference was to see whether there were any gender biases, which would affect the results. For example, a significantly greater number of boys than girls being nominated in the “aggressive/oppositional” category, in comparison with the “withdrawn/isolated category”. There were a total of 17 boys nominated in the “aggressive/oppositional” category and 14 boys nominated in the “withdrawn/isolated category”. Eleven girls were nominated in each category. A chi-square analysis resulted in a value of 0.12 indicating there were no significant differences in the number of boys and girls being nominated in either category. No significant

differences between the boys and girls data meant it could be analyzed together in each category. However, scoring was differentiated, as explained in Chapter 3.

CBSP Scores

Each scale of the CBSP was scored separately. The means and standard deviation scores on each of the measures are shown in Table 6. The scores for individual children on each sub-scale, and the risk status associated with their score, is shown in Appendix 7.

Insert Table 6 (page 76)

Means (SD) on CPSP and Observation Measures

A risk status was assigned to scores on the CIQ, ABS, the SIS, the ADBS and the MABS (as shown in the previous chapter). The categories of risk status were “no risk”, “at risk”, “high risk” and “extreme risk” for each scale. For each scale, the number of withdrawn/isolated scores in each risk status is shown in table 7.

For each scale, the number of withdrawn/isolated scores in each risk status is shown in table 8.

Table 7 (page 77)

Frequency of Risk Status for Nominated Withdrawn/Isolated Children

Table 8 (page 78)

Frequency of Risk Status for Nominated Aggressive/Oppositional Children

Teacher Ranking and CBSP Sub-scales

The agreement between the teacher's ranking of a child as either most concerning or lesser concerning and whether a child's score on a sub-scale of the *CBSP* was the highest or lowest of those nominated was determined. In total, there were 9 “aggressive/oppositional” children (one from each centre that nominated in that category) who were ranked as “most concerning”, and 9 ranked as “least concerning”. There were 9 “withdrawn/isolated” children (one from each centre that nominated on that category) who were ranked as “most concerning”, and 9 ranked as “least concerning”. 3 of the 9 children who were ranked as “most concerning” by their teachers received the highest corresponding scores on the *CBSP*. 3 of the 9 children ranked as “least concerning” by their teachers received the lowest corresponding scores on the *CBSP*. The level of agreement between the teacher rank and each *CBSP* sub scale for the withdrawn/isolated category was determined, as shown in Table 9. A chi-square analysis was conducted showing that the values for the CIQ and the MABS were significant ($p < 0.01$).

The level of agreement between the teacher ranking and each *CBSP* sub scale for the aggressive/oppositional category was determined, as shown in Table 10.

Insert Table 9 (page 79)

Within Centre Agreement Between Teacher Ranking and CBSP Scores for Children Nominated as “Withdrawn/Isolated”

Insert Table 10 (page 80)

*Within Centre Agreement Between Teacher Ranking and CBSP Scores for
Children Nominated as “Aggressive/Oppositional”*

The children ranked by their teachers as the most concerning did not necessarily get the highest within-centre score on any of the measures of the *CBSP* (Individual data are in Appendix 7). Conversely, the children rated, as “least concerning” did not necessarily get the lowest within-centre score on any of the sub-scales of the *CBSP*. The only scales for which significant result were obtained were on the “withdrawn/isolated” category for the CIQ, and the MABS. However, the MABS result was in the opposite direction, that is, the higher-ranking children received the lower scores.

Combined Risk and Teacher Rank

To evaluate if the nominated children scored “high risk” or “extreme risk” status overall, the risk status assigned to the CIQ, ABS, the SIS, the ADBS, and the MABS were summed into a single combined score, using a value of 3 for “extreme risk” on any sub-scale, a value of 2 for “high” and a value of 1 for “at risk”. 0 points were given for “no risk”.

The *CBSP* combined risk scores ranged from 0 to 16, with a mean of 8.43 and a standard deviation of 3.80 (scores of individual subjects are shown in Appendix 7). Risk levels were assigned to the combined risk score in the following procedure: The categories were “no risk (0 points), “at risk” (1-5 points and no single score of “extreme” risk level), “high risk” (6 to 9 points, with no more than one score at

“extreme risk”), and “extreme risk” (10+ points, with two or more scores at extreme risk levels. The number of combined *CBSP* scores at each risk status for both the withdrawn/isolated and aggressive/oppositional categories are shown in Table 11. The total number of study children at each risk status is shown, and are also presented as a percentage of the total combined roll of the centres.

Insert Table 11 (page 81)

Risk Status of Children by Combined CBSP Risk Score

Estimation of Prevalence of Behaviour Problems

The number of children on the roll at each centre varied, ranging from 27 children to 120 children. In total, 53 study children were nominated from a total of 712 children on the rolls of the 10 centres. As shown in table 10, of the 53 nominated children, 52 received a *CBSP* combined risk score of “at risk” or higher, which equates to approximately 7.3% of the total number of children attending across the centers. 14 received high risk (3.2%) and 18 (2.53%) had a score in the extreme risk category.

Specificity of CBSP

The specificity of the *CBSP* or whether the screening measure could discriminate between the most concerning and lesser concerning children on both the “aggressive/oppositional” and “withdrawn/isolated” dimensions was examined. It was hypothesized that for the *CBSP* to show an adequate level of specificity, the children nominated as being most concerning (highest ranked) by teachers in either category should obtain at least a “high risk” status on the Combined *CBSP* risk score.

A child-by-child comparison of teacher rank with combined CBSP risk score was made. The *CBSP risk* scores matched the teacher nominations in 42 of 53 cases, as 42 of the nominated children had a combined risk score of “high” or “extreme”. This indicates the specificity of the CBSP, as the teacher’s concerns were confirmed in 79% of cases.

Teacher Ranking and the Direct Observation Procedure (DOP) Score

The agreement between the teacher ranking and the DOP scores was determined. If children’s DOP scores were in the same rank order (highest percentage of concerning behaviour to the lowest percentage) as the teacher’s rankings (most concerning to least concerning), the ranking would be in agreement.

The scores were separated into a “no risk” category, and the “at risk” “high risk” and “extreme risk” categories were combined together. On the withdrawn/isolated category, 15 out of 25 (60%) teacher and DOP rankings were in agreement. On the aggressive/oppositional category, 21 out of 28 (75%) teacher and DOP rankings were in agreement.

Estimated Prevalence From the Direct Observation Procedure (DOP)

The DOP scores were analysed separately to obtain the prevalence of scores that were “no risk”, “at risk”, “high risk” and “extreme risk”. 22 of the 53 scores received an “at risk” status or above, and 31 received a “no risk” status. Therefore, the prevalence was 3.09%. The number of DOP scores in each risk status are shown in Table 12. The scores are also presented as a percentage of the study children, and as a percentage of the total number of children on the roll at the centres (prevalence).

Insert Table 12 (page 82)

Estimated Prevalence of Behaviour Problems Based on Direct Observation of Nominated Children in Free Play

Combined CBSP Risk Score with the Direct Observation Procedure (DOP) Score

The agreement between the children's combined *CBSP* risk score and their score on the DOP was determined. If children who received a “no risk” status on their combined *CBSP* score received the corresponding status on the DOP these risks would be in agreement. Conversely, children who received an “at risk”, “high risk” or “extreme risk” status on their combined *CBSP* score received an “at risk” status or higher on the DOP, these risks would be in agreement.

The scores were separated into a “no risk” category, and the “at risk” “high risk” and “extreme risk” categories were combined together. On the withdrawn/isolated category, 10 out of the 25 (40%) combined *CBSP* scores received the corresponding status on the DOP. On the aggressive/oppositional category, 13 out of the 28 (46%) combined *CBSP* scores received the corresponding status on the DOP.

Chapter 5

Discussion

In this study, combined scores on the CIQ and the 4 scales of the BI determined a child's overall risk status. For example, in the withdrawn/isolated category, subject 10-X received a "no risk" status. This child received a score of 0 on the CIQ, and "sometimes" exhibited some items on the BI. For example, is sometimes "left out or unnoticed by peers" and sometimes "participates well in group activities". Risk status increased as the number of items exhibited on the CIQ increased, and as the number of items and their frequency on the BI increased. For example, subject 6-Y (withdrawn/isolated) received a combined "extreme risk" status. This child received a score of 3 on the CIQ; "persistently avoids interaction", "appears sad or depressed", and "often lacks energy and animation". This child also exhibited some items on the BI "most of the time", including "displays anxious fearful behaviour in daily situations" and "is left out, unnoticed and actively avoided by peers".

For both of these children, the individual scores children obtained on each scale were not examined, as a single combined risk score was calculated quantitatively by summing the number of points obtained from each scale into a total score. In comparison, if this study had been calculated quantitatively, the individual's scores would have been by analysed separately on a scale-by-scale basis. This is a limitation of the study, as, for example; a child may have received an "extreme" risk status on one scale, a "no risk status on one scale, and an "at risk" status on the other 3 scales. Because the scores were summed into a single score, this child may have received an overall quantitative risk status of "high". If we had instead looked at the individual score for the scales, we would have realised this child had only scored

“high or extreme” risk on a single scale, and did not display highly concerning behaviours on all scales. If the information provided by the centre staff had been examined, possible causes of this behaviour may have been determined. Since only a total overall score was obtained, we do not know any specific information about the individual children’s scores.

The relationship teacher nomination and gender was examined. There was no significant gender bias in terms of teacher nomination into either the “aggressive/oppositional” or the “withdrawn/isolated” categories. As there were no difference between the number of boy’s and girl’s nominated, the data did not have to be analyzed separately in terms of gender. This finding contrasts with some literature, as authors such as Squires et al. (2004) have found a significantly greater number of males compared to females are represented in the “aggressive/oppositional” category

The children were nominated from 712 children on the rolls at the 10 centres. Of the 53 nominated children, 52 received a combined risk status on the *CBSP* (GSE, 2005) of “at risk” or higher, which is approximately 7.3 percent of the total number of children. This figure falls in the range of reported prevalence figures reported by Carter et al. (2004) of between approximately 7 to 24 percent, with the majority falling between 10 and 15 percent. According to Walker et al. (1995), approximately 7% of children’s scores should fall in the high and extreme risk categories, and in this study, 5.73% fell in these risk categories. It was hypothesized the prevalence rate would be relatively low in this study, as not all centres nominated children in both categories. In addition, even if all centres had nominated the specified 6 children and if the children all obtained an “at risk” status or above, this would only equate to a prevalence of approximately 8.4 percent. The scoring of the combined risk status

score was very conservative, in that it could be argued the children whose combined score included one high risk on a subscale be identified as “high risk”, and it could also be argued that children with one “extreme risk” on a subscale could be identified as “extreme risk”.

The initial specificity of the *CBSP* was 79%, as 42 out of the 53 children teachers nominated as most concerning at their centre, received a combined risk score of “high” or “very high” risk on the *CBSP*, as opposed to “no” or “at risk”. This indicates teacher concerns were confirmed in 79% of cases. As the children nominated were the “most concerning” in terms of behaviour at the centres, it was likely they would receive a “high” or “extreme” risk status on the *CBSP*. This was not confirmed in 11 of 53 cases, as two children from the “aggressive/oppositional” category, and 9 children from the “withdrawn/isolated category” scored a “no” or “low risk” status on the combined score.

Limitations were identified which may explain why teachers concerns were not confirmed and if they did not apply the sensitivity of the *CBSP* may exceed the 80% standard identified by Salvia and Ysseldyke (2004) as being the required specificity standard for screening instruments. Four of the children received a “high” or “extreme” risk status on the *DOP*. This could be because these children may only have very few concerning behaviours but exhibit them frequently. Because the *CIQ* and the *BI* are based on the quantity of behaviours exhibited by children, they may receive low scores on the *CBSP* but were observed to frequently exhibit the same concerning behaviours. Limitations were identified for the 2 children nominated in the “aggressive/oppositional” category. One child was the 4th ranked child at a centre who scored 0 for the combined risk score. Centres were asked to nominate a

maximum of 3 children only on each category. Therefore, it can be expected that this 4th ranked child may be of less concern, and get a lower score on the *CBSP* compared to the other 3 nominated children from the centre. The other child received a total combined *CBSP* score of “5”. A score of 6 is considered “high risk” meaning this child was on the borderline for the “high risk” category. In addition, this child was nominated from a centre where English was their second language. Staff did not believe their centre should have been included in the study as they thought language was the main factor in these children being nominated. Also, parent consent was not gained for 2 children staff wanted to nominate on the “aggressive/oppositional” category, meaning this child was likely to be the 3rd most concerning child, and receive a lower score.

Limitations can be identified for 7 of the 9 children nominated in the “withdrawn/isolated” category who did not receive a “high” or “extreme” risk status. Five of the 9 children were nominated from the same centre, and all received low scores. This centre nominated 5 children on the “withdrawn/isolated” category only, as opposed to nominating on both categories. The reason for this was the parents of 2 children staff wanted to nominate on the “aggressive/oppositional” category did not consent, and the centre decided to only nominate on the “withdrawn/isolated” category”. This means at least 2 children that were nominated may not have been highly concerning and it is likely that these children would receive lower scores on the *CBSP*. Two other children attended the centre where English was their second language and scored relatively low *CBSP* combined risk.

There are several possible reasons why the level of agreement between the teacher ranking and the *CBSP* scores did not meet statistical significance. First, the

design of the study limited nomination and ranking. The study teachers nominated children and then ranked them against the other nominated children rather than within the centre as a whole. Within a centre there might have been little difference in the behaviours of the nominated children as a group or within a category. In centres 1, 2, 4, 5, 7, 8 and 9, for example, the 2 highest ranked children in the aggressive/oppositional category were within 2 points of each other on the combined score, and in centre 6, the children ranked 1, 2 and 3 all scored 10 (extreme risk). A similar pattern for withdrawn/isolated was shown in centres 9 and 10. All 3 children nominated in this category in centres 4, 6 and 8 were either at “high” or “extreme” risk (centre 7 nominated 1 and centre 5 nominated 0 on this category). Together, this information supports an interpretation that the ranking exercise may have forced teachers to make distinctions that they would not have otherwise made. Thus, there was no meaningful distinction between the nominated children as low agreement may simply be the result of the study design.

Another possible limitation is the different teachers may have interpreted the ranking process differently. For example, in some cases the same children were nominated in both categories or the ranking was made across categories. The researcher did not check with the different centres to see if they all interpreted the ranking procedure in the same way. Third, the *CBSP* procedure may not differentiate between the children in the same way that the teacher does. For example, a teacher may consider the “most concerning” child to be the one who creates the most disturbances at the centre, whereas the *CBSP* scoring may be interpreted as considering the “most concerning” (highest scoring) child to be one who displays the most serious behaviour problems, such as setting fires and vandalising property. This is supported in part by the lack of agreement between the observation scores within a

centre and the teacher rank, which was 15 of 25 (65%) for the withdrawn/isolated category and 21 of 28 (75%) for the aggressive/oppositional category

In terms of the agreement between the risk status on the Combined *CBSP* Score and the DOP score, the result showed the children who received a “no” or “at/high/extreme” risk on the combined *CBSP* score did not necessarily receive the corresponding status on the DOP. There was agreement for 10 of 25 (40%) scores in the withdrawn/isolated category, and agreement for 13 of 28 (46%) scores in the aggressive/oppositional category.

Closer examination of the scores of the children for who agreement was not reached revealed some potential limitations, which may have contributed to the disagreements. A limitation was found with the DOP in that the score received on the observation may not accurately represent the behaviour of children nominated in the “aggressive/oppositional” category. The researcher noted that children may play prosocially for most of the observed period but display short but frequent “aggressive/oppositional” behaviours. This indicates that the child's “aggressive/oppositional” behaviours are a problem, but they may only total less than one minute of the observation period, and this translates into a “no risk” level. Similarly, a child nominated on the “withdrawn/isolated” category may not exhibit behaviours that are targeted on the *CBSP*, such as maladaptive behaviours. A child nominated as “withdrawn/isolated” may be more passive in free play settings (which are observed) but may still display adaptive behaviours and social behaviours in small group situations where they feel more confident, thus their score might not accurately represent their behaviour.

An additional consideration is that 10 children who received an “at/high/extreme” risk status on the *CBSP* received a score from the DOP of 31% or higher which was near the cut-off value for a “high risk” status of 40% for girls and 37% for boys. New Zealand early childhood teachers may consider 30% antisocial behaviour to be an unacceptable level and may reflect a cultural difference between New Zealand and overseas. If the risk levels for observed behaviour were set at 30% for both boys and girls at 30% of the time spent in aggressive/oppositional or withdrawn/isolated behaviour, the specificity on the *CBSP* improves to 62.5% for the withdrawn/isolated category, and 71.4% in the aggressive/oppositional category.

An additional consideration is that 2 children, for whom agreement was not reached, were learning English as a second language and the centre did not feel the *CBSP* was appropriate for these children as it was language, not behaviour, that was the contributing factor. If these issues were taken into consideration agreement may have been reached for a higher proportion of children, increasing the validity of the *CBSP*.

Another possible limitations as to why there is low agreement between the *CBSP*, the teacher ranking and the DOP, is that the teacher’s nomination was based on the frequency of a behaviour rather than severity (e.g., the child in question may exhibit a number of small frequent acts considered more of a problem at the centre than infrequent major problem behaviours). Another reason is that teachers may be more likely to report behaviours that they have witnessed at the centre rather than those they may have heard about at home, such as a child trying to burn the house down. This may mean teachers are nominating children that are a problem to them at the centre, whereas the child that did a major problem behaviour at home is likely to be more concerning in terms of the *CBSP*.

Another potential reason for the low agreement between teacher rank and *CBSP* score may reflect the context and composition of the centre itself. In some centres, the teachers who nominated and ranked children may not have completed the *CBSP*. Thus, the *CBSP* scores within centres may reflect differing perceptions and experiences. In practise, this problem could be addressed by having a group process inform completion of the *CBSP* within each centre.

Another limitation might exist in the differences between centres. For example, certain behaviours may be more tolerated in one centre over another, or what is considered most concerning at one centre may not be seen as at all concerning at another centre. Hence, a centre may be nominating their most concerning children, but overall they would not score high on the *CBSP*. Teachers within and across centres are likely have had different standards of what constitutes behaviour problems. The nominations and ranking were also limited by the need to obtain parental consent for inclusion in the study. Several centres anecdotally reported to the researcher that some parents declined to allow their children to participate in the study, meaning that some of the most concerning children were not included in the study. In practice, the issue of parent/carer consent for behaviour screening would need to be addressed. This means the figure of 79% must be considered to be indicative only.

A number of reasons have been identified as to why these factors have affected the results. If these limitations were overcome, it is likely the specificity would be improved perhaps beyond the 80% standard for screening instruments. If this was to occur, it is likely the *CBSP* may have many benefits over the current system for screening for behaviour problems in early childhood centres services.

The validity of the screening instruments reported in the literature varies greatly, from study to study, ranging from approximately 0.60 to 0.93. Although the standard specified by Salvia and Ysseldyke (2004) is 0.80 for a good quality instrument, particularly some of the relatively new instruments, such as the *Temperament and Atypical Behaviour Scale* developed by Neisworth et al. in 1999 (Gomez and Baird, 2005) with a specificity of 0.72 do not meet this standard. The 79% specificity obtained by the *CBSP* is very encouraging, meaning it could be a potentially valid screening instrument. In fact, the *CBSP* seems more encouraging than some of the equivalent measures reported in the literature, such as the *Temperament and Atypical Behaviour Scale* (Gomez and Baird, 2005) and the *Strengths and Difficulties Questionnaire* (Goodman, 1997), which has a reported specificity of 0.63.

The *CBSP* was designed for use locally in the first instance. This is a strength compared to the screening instruments from overseas, which may not be appropriate for use in Canterbury, due to completely different cultures.

According to Bordignon and Lamb (2004), the current consensus among researchers is that five criteria should be investigated in terms of selecting a screening instrument. These include the standardization sample, the cost of administration, the ease of administration, the content and the reported measures of reliability and validity. The *CBSP* as the measure meets some of these criteria, specifically in terms of the low-cost, ease of administration, and validity. Future studies should investigate the reliability of the *CBSP* and determine any changes needed in the scoring and ranking processes by using a much larger sample.

Bordignon and Lamb (2004) also recommend that information about children be gathered from multiple sources in order to obtain a more complete picture of the

child, and to increase the accuracy of the screening. If the independent observations are retained this could further strengthen the *CBSP* as part of a protocol. Walker et al. (1995) believe that often early intervention for severe social-emotional and behavioural problems is often only taken when a child is referred by a parent or teacher and referral can be delayed until it is too late for the intervention to be most effective. It may be that children in early childhood settings with externalising and internalising behaviours are not receiving any services (Walker et al., 1995). The *CBSP* could be used as a first screener for all children in a centre and with the children nominated by the staff as most concerning. These with high scores on the DOP would be referred for a complete evaluation to determine eligibility for early intervention. This three-step procedure increases appropriate identification and treatment of children most at risk for developing antisocial behaviours and conduct disorders.

A meta-analysis by Bennett, Lipman, Racine and Offord (1998) reported that screening had extremely high rates of misclassification; at least half of the children who later develop antisocial behaviour or conduct disorder were initially missed by screening procedures and so did not receive an intervention. Alternatively, approximately half of the children who received an intervention did not need it and may have been negatively affected (Bennett et al., 1998). This problem could be avoided by using the *CBSP* only as a nomination procedure for observation and perhaps for eligibility testing. This would potentially reduce extensive testing of every child referred, as is the present procedure, and thus preserve resources for the most in need.

According to Walker et al. (1995), young children with mild to moderate behavioural problems are at the greatest risk for being overlooked using traditional screening tests. This problem can be avoided if the *CBSP* is used as a screening instrument in early childhood centres, because screening all children in a centre means it is unlikely any children demonstrating behaviour problems will be overlooked. Thus, all identified children will be tested for eligibility, and, if intervention is deemed necessary, they will get services, minimising the rate of false negatives. Conversely in a multiple step eligibility procedure means children must pass through three steps several gates before it is deemed necessary that they receive an intervention, meaning it is likely only the children with the highest level of need will actually get services.

As part of evaluating the social validity of the draft *CBSP*, all centres were given a feedback form to complete of their experience using the draft *CBSP*, and to suggest any changes that could be made to improve the procedure. Four of the 10 centres returned a completed feedback form. It is not clear why 6 centres did not complete the feedback form, although anecdotally they reported that there was insufficient time.

A number of issues about the draft *CBSP* were raised. Staff were asked on the feedback form to indicate how easily they understood the draft *CBSP* procedure. This was varied as 3 centres indicating the procedure was mostly it was “easy to understand”, and one centre indicated that the procedure was mostly “average” to understand.

The number of forms and separate booklets included in the *CBSP* procedure could have made it difficult for centres to keep track of what had been completed, and

what had not, especially if more than one staff member was completing the procedure, which occurred in the majority of centres. 8 centres returned incomplete or incorrectly completed materials. This indicates that having a number of separate booklets to keep track of and complete is likely to have contributed to this. In some instances, clarification was difficult to obtain, and in particular the ranking and nomination procedures. This indicates the instructions to the teachers may have been confusing in terms of getting required and accurate information from the centre staff, and this may have also affected agreement obtained.

Staff indicated on the feedback form that the procedure took between 20 minutes and one hour to complete for each child, indicating that the procedure may be too time consuming for some centres. This may be a function of the number of materials that required completion. A subsequent draft could combine materials in a folder or book form. The folder could also have space to put any materials that cannot be bound such as child consent forms. Binding the materials in a folder in the order in which they are to be completed may have the advantage of making the procedure easier to follow and understand, as well as making it less likely that separate materials will be forgotten or lost. It may also cut down on completion time if the staff are not looking around for loose materials. Familiarity with the procedure and better instructions may also reduce the time per child.

Staff were asked to rate the relevance of the *CBSF* to children with behaviour and/or social emotional problems. Responses were encouraging, with “very relevant”, and a the higher end of “somewhat relevant” selected. Centres also indicated that parents (approached for consent purposes) were concerned if their child had been nominated in the “aggressive/oppositional” category, but parents were largely

unconcerned if their children were nominated in the “withdrawn/isolated” category. This may indicate that in New Zealand society, it is more acceptable for children to display “withdrawn/isolated” behaviours than “aggressive/oppositional” behaviours. This also raises the possibility that many “withdrawn/isolated children” in New Zealand early childhood centres may be overlooked for services even though they may develop serious problems with their social development. If the *CBSP* was introduced into early childhood centres this may result in an increase in the number of children displaying “withdrawn/isolated” behaviours being identified. This is important, as these behaviours may be early signs of later mental health problems.

Several centres also indicated the parent information letter approved by the University Ethics Committee (Appendix 5) was worded in such a way that was not appropriate in early childhood education, and staff had to take great care in explaining the study to parents for fear of alarming them.

Because the current study of the draft *CBSP* is a small field trial, future research with a greater number of participants must be conducted to determine an accurate specificity. Being a draft, it is expected that there would be a number of problems and limitations to overcome before a final *CBSP* can be developed. Hence, future research could attempt to overcome the limitations specified. In addition, future research could focus on trying the *CBSP* and observations with children that had been referred for behaviour problems to Group Special Education, Early Intervention. The *CBSP* and observation scores could be compared with scores on the eligibility protocol, similar to the SDQ procedure used by Goodman & Scott (1999), who compared scores from high-risk and low-risk samples of children. This is likely to be an effective way of additionally determining the specificity of the *CBSP*, as their scores should reflect

their assessment by Group Special Education, Early Intervention. However, as there is no systematic referral procedure for GSE, there is still the potential for false negatives (children who need services missing out) and false positives (children referred for services who have an extensive assessment before being found to not be eligible). Until future research conducts the *CBSP* with all children the centres, false positives and negatives cannot be identified. The *CBSP* is designed to be the first step in a systematic referral procedure, with the observation to be a second step. Together, these steps provide a potential alternative, which has the potential to reduce referral pre-treatment assessment. However, both steps need further development and testing, in particular the concurrent validity, and test-retest reliability.

In conclusion, Canterbury could benefit from a standard measure put in place for identifying and referring children who may be at risk for externalising and internalising behaviour problems. A new screening protocol developed for Canterbury, the draft *Canterbury Behaviour Screening Protocol (CBSP)* is a promising new instrument, showing an initial specificity of 79%, which is stronger than some of the equivalent measures in the literature. However, the children ranked as the “most concerning” or “least concerning” by the centres did not necessarily get the highest (or lowest) scores on the *CBSP* Questionnaires, or the highest (or lowest) scores on the DOP. Several limitations were identified as to why this may have occurred and if these limitations were addressed in subsequent drafts, it is possible that the specificity may further improve. The *CBSP* may be a potentially useful instrument for behaviour screening in New Zealand early childhood centres.

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Tables

Table 1

Summary Table of Psychometric Properties of Screening Instruments from Independent Reviews

Screening Instruments	Test-Retest Validity	Inter-rater Reliability	Sensitivity	Specificity	Concurrent Validity
ASQ:SE	0.94		0.82	0.92	0.93
BITSEA				0.70	0.85-0.95
SDQ			0.63	0.95	
TAS	0.81-0.94	0.81-0.94			0.72
PKBS	0.62-0.87	0.36-0.63			
TBSI					
SSRS	0.64-0.87				
ASPI					
ESP	0.72	0.87-0.88			0.69-0.80

Table 2

Number and Category of Nominated Children.

Centre	Roll	N	Nominated Category	
			Nominated	
			Withdrawn/ Isolated	Aggressive/ Oppositional
01	27	6	3	2
02	55	6	2	4
03	57	4	2	2
04	96	6	3	3
05	80	4	0	4
06	90	6	3	3
07	73	5	1	4
08	47	6	3	3
09	67	6	3	3
10	120	5	3	0
<i>Total</i>	712	53	25	28

Table 3

Subject Characteristics by Nominated Category.

Characteristic	Nominated Category	
	Withdrawn/Isolated	Aggressive/Oppositional
N	25	28
Percent Boys	56.0%	60.7%
Age (Months)	<i>M</i> = 45.32 (30-60)	<i>M</i> = 46.11 (34-57)
	<i>SD</i> = 9.411	<i>SD</i> = 8.333
	(<i>N</i> =25)	(<i>N</i> =28)
Hours Attended	<i>M</i> = 19.60 (4 - 48)	<i>M</i> = 25.09 (8-53)
	<i>SD</i> = 12.25	<i>SD</i> = 11.85
	(<i>N</i> =22)	(<i>N</i> =24)

Table 4

Item Distribution to Subscales in the Behaviour Index

Item #	Behaviour Descriptor in Item	Sub-Scales			
		ABS	SIS	ABS	MABS
1	Follows the centres limits and boundaries (Belonging, Goal 4)			X	
2	Refuses to participate in games or activities with other children during free (unstructured) play (PPG, p. 33)				X
3	Harms adults or has to be prevented from doing so (PPG, p. 26)	X			
4	Gains other children's attention in an appropriate verbal/non verbal manner (TW Communication, Goal 1 and 2)			X	
	Verbally responds to a peer's initiation (TW Communication, Goal 2)		X		
6	Demonstrates non-cooperative behaviours when directed (shouts back, ignores teacher etc) (PPG, p.33)				X
7	Harms other children or has to be prevented from doing so (PPG, p. 26)	X			

Item #	Behaviour Descriptor in Item	Sub-Scales			
		ABS	SIS	ABS	MABS
8	Expresses anger appropriately (without becoming violent or destructive) (TW Contribution, Goal 3)			X	
9	Has tantrums (PPG, p. 29)	X			
10	Responds inappropriately when other children try to interact socially with him/her (PPG. p. 33)				X
11	Laughs with classmates (TW Contribution, Goal 3)		X		
12	Damages others' property (materials, personal possessions) (PPG, p. 26)	X			
13	Cooperates with other children (TW Contribution, Goal 3)			X	
14	Tests or challenges the centres limits/rules (PPG, P. 6)				X
15	Engages in conversations longer than 30 seconds (TW Communication, Goal 2)		X		
16	Displays highly inappropriate feelings in normal situations e.g. laughing/crying (PPG. p. 22)	X			

Item #	Behaviour Descriptor in Item	Sub-Scales			
		ABS	SIS	ABS	MABS
17	Is teased/bullied by peers (TW Belonging Goal 2)	X			
18	Gains teachers attention in appropriate ways (TW Belonging, Goal 4)			X	
19	Spontaneously contributes during a group discussion (TW Belonging, Goal 2)		X		
20	Creates a disturbance during activities (noisy, bothers other children etc) (PPG. p. 33)				X
21	Readily attempts new activities (TW Exploration, Goal 1)		X		
22	Is left out or unnoticed by peers (TW Belonging, Goal 2)	X			
23	Ignores teacher's warnings or redirections (PPG. p.29)	X			
24	Participates well in group activities (TW Contribution, Goal 3)			X	
25	Has a positive view of self (TW Wellbeing, Goal 2)		X		
26	Is very demanding of the teacher's attention (PPG. p.22)				X
27	Makes offensive gestures (PPG. p. 33)	X			

Item #	Behaviour Descriptor in Item	Sub-Scales			
		ABS	SIS	ABS	MABS
28	Follows teacher directions (TW Belonging, Goal 4)			X	
29	Displays anxious/fearful behaviour in daily situations (TW Wellbeing, Goal 3)		X		
30	Pouts or sulks (PPG. p.33)				X
31	Uses offensive language (PPG. p.33)	X			
32	Peers actively avoid this child (TW Belonging, Goal 2)	X			
33	Initiates positive social contact with peers (TW Contribution, Goal 3)			X	
34	Needs redirection before he/she will stop an inappropriate activity or behaviour (PPG. p.29)				X
35	Is overly affectionate with others (touching, hugging, kissing, hanging on, etc) (PPG. p.22)				X
36	Verbally initiates to a peer or peers (TW Communication, Goal 2)		X		

Table 5

Score Equivalents of Risk Status

Measure	Gender	Risk Status			
		No Risk (0)	At Risk (1)	High Risk (2)	Extreme Risk (3)
CIQ	Boy	0-1	2	3	4 or more
	Girl	0-1	2	3	4 or more
ABS	Boy	0-14	15-16	17-18	19 or more
	Girl	0-13	14	15	16 or more
SIS	Boy	28 or more	27 or less	n/a	n/a
	Girl	28 or more	27 or less	n/a	n/a
ADBS	Boy	26 or more	25-27	22-24	21 or less
	Girl	28 or more	27-29	24-26	23 or less
MABS	Boy	0-19	20-22	23-25	26 or more
	Girl	0-19	20-22	23-25	26 or more
DOB	Boy	0%-39%	40%-49%	50%-59%	60% or more
	Girl	0%-36%	37%-45%	46%-54%	55% or more

Table 6

Mean Scores (SD) for Children by Nominated Category on CPSP and Observation

Measure	Nominated Category	
	Withdrawn/ Isolated (N= 25)	Aggressive/ Oppositional (N= 28)
Contextual Incidents	1.68 (1.282)	2.04 (1.55)
Questionnaire (CIQ)	<i>0-4</i>	<i>0-7*</i>
Aggressive Behaviour	15.60 (4.518)	22.54 (5.196)
Scale (ABS)	<i>9-24</i>	<i>12-34</i>
Social Interaction Scale	21.40 (5.346)	25.00 (4.698)
(SIS)	<i>11-31</i>	<i>15-32</i>
Adaptive Behaviour	24.68 (6.517)	24.55 (4.504)
Scale (ADBS)	<i>11-35</i>	<i>15-38</i>
Maladaptive Behaviour	21.36 (5.656)	27.38 (4.535)
Scale (MABS)	<i>12-31</i>	<i>17-35</i>
Direct Behaviour	40.24 (28.078)	42.54 (22.386)
Observation (DOB)	<i>5-95</i>	<i>1-100</i>

* = Range showed in italics

Table 7

Frequency of Risk Status for Nominated Withdrawn/Isolated Children (N=25)

Measure	Risk Status and Value			
	No Risk (0)	At Risk (1)	High Risk (2)	Extreme Risk (3)
Contextual Incidents	11	7	5	2
Questionnaire (CIQ)				
Aggressive	8	7	1	9
Behaviour Scale				
(ABS)				
Social Interaction	6	19	n/a	n/a
Scale				
(SIS)				
Adaptive Behaviour	7	5	4	9
Scale (ADBS)				
Maladaptive	9	4	7	5
Behaviour Scale				
(MABS)				
Direct Observation	16	0	3	6
Procedure (DOP)				

n/a = not applicable to the scale

Table 8

Frequency of Risk Status for Nominated Aggressive/Oppositional Children (N=28)

Measure	Risk Status and Value			
	No Risk (0)	At Risk (1)	High Risk (2)	Extreme Risk (3)
Contextual Incidents	12	5	8	3
Questionnaire (CIQ)				
Aggressive	1	1	1	25
Behaviour Scale				
(ABS)				
Social Interaction	8	20	n/a	n/a
Scale				
(SIS)				
Adaptive Behaviour	4	5	9	10
Scale (ADBS)				
Maladaptive	1	5	4	18
Behaviour Scale				
(MABS)				
Direct Observation	15	2	4	7
Procedure				

n/a = not applicable to the scale

Table 9

*Within Centre Agreement Between Teacher Ranking and CBSP Scores for Children
Nominated as “Withdrawn/Isolated”*

CBSP Subscale	Teacher Rank		Chi-Square Value	<i>p</i>
	Highest	Lowest		
CIQ	1	1	9.00	<i>0.01</i> *
ABS	5	5	1.00	<i>1.00</i> <i>n.s.</i>
SIS	3	3	1.00	<i>1.00</i> <i>n.s.</i>
ADBS	3	4	0.25	<i>1.00</i> <i>n.s.</i>
MABS	3	1	4.27	<i>0.05</i> *

* = Significant

n.s. = non-significant

Table 10

*Within Centre Agreement Between Teacher Ranking and CBSP Scores for Children
Nominated as “Aggressive/Oppositional”*

CBSP Subscale	Teacher Rank		Chi-Square Value	<i>p</i>
	Highest	Lowest		
CIQ	3	3	2.00	<i>0.20 n.s.</i>
ABS	2	5	1.00	<i>1.00 n.s.</i>
SIS	4	5	0.00	<i>1.00 n.s.</i>
ADBS	1	5	2.49	<i>0.20 n.s.</i>
MABS	3	5	0.23	<i>1.00 n.s.</i>

* = significant

Table 11

Risk Status of Children by Combined CBSP Risk Score

Combined Risk Score	Risk Status	Withdrawn/ Isolated	Aggressive/ Oppositional	Total Number of Study Children	Percent of Total Combined Roll of Centres (N=712)
0	None	1	0	1	N/A
1-5	At Risk	8	2	10	1.4%
6-9	High Risk	8	6	14	2.1%
10+	Extreme Risk	8	20	28	3.8%
<i>Totals</i>		25	28	53	

Table 12

*Estimated Prevalence of Behaviour Problems Based on Direct
Observation of Nominated Children in Free Play*

Risk Status	Direct Observation Procedure (DOPS)	Prevalence (N=712)
No Risk	31 (58.5%)	N/A
At Risk	2 (3.80%)	0.28%
High Risk	7 (13.2%)	0.98%
Extreme Risk	13 (24.5%)	1.83%

Appendix 1

Consent from Human Subjects

Appendix 2

Approved Letter from the Researcher to the Early Childhood Centres

Health Sciences Department
University of Canterbury
Private Bag 4800
Christchurch
30 March 2005

Canterbury Behaviour Screening Protocol (CBSP)

Dear Early Childhood Teacher,

My name is Amy Smyth. I am a student at the University of Canterbury and am currently completing a Masters of Health Sciences endorsed in Early Intervention. As part of my degree, I am required to complete a dissertation and I would like you and children you nominate to be involved in the research.

The topic of my research is children's behaviour. The *Canterbury Behaviour Screening Protocol* (CBSP) was developed in collaboration with the Ministry of Education's Group Special Education Early Intervention Team, with contributions from the Christchurch College of Education Early Childhood Education programme. The purpose of the *Canterbury Behaviour Screening Protocol* (CBSP), which is in draft form, is ultimately to help early childhood professionals identify children who exhibit either "aggressive/oppositional" or "withdrawn/isolated" behavioural patterns and who may benefit from early intervention. The purpose of my dissertation is to conduct an independent examination to assess the screening accuracy of the *Canterbury Behaviour Screening Protocol* (CBSP). We hope that the participation of the children you nominate in the study will also be of interest to you.

You will receive with this letter a booklet from an Early Intervention teacher for you to complete which contains instructions for you to nominate six children from your centre who show "aggressive/oppositional" or "withdrawn/isolated" behaviours. **Even if there is only one child in your centre who you feel might meet the descriptors at a high level, please nominate a total of 6 children, including some children with low levels of matching to the descriptors.** This is needed to see if the draft *Canterbury Behaviour Screening Protocol* (CBSP) can discriminate between the children.

The booklet also contains information sheets and consent forms for the parents/carers of the six children you plan to nominate. Please explain the study to parents using the information sheet I have written. The parents are able to read the booklet if they wish. Please have the parents/carers sign the consent form if they agree to allow their child participate in this study. If a parent/carer does not want their child to participate, please do not nominate their child, but please indicate on the feedback form how many children (if any) would have been nominated otherwise. This will help us understand more about the scores and ratings for the study purposes.

After you have nominated the children on the first form in the booklet, complete a questionnaire and checklist for each of the 6 children, as well as some

additional detail. We also would like you to complete a feedback form. The booklet contains instructions for you on completing the forms.

I would also like to do two 10-minute observations of each of the six children nominated when they are playing at the centre. In this way, similar observations will be completed on all children in the study. This will help control for differences between the perceptions of those completing the checklists and questionnaires. When I do the observations, I will record the number of minutes of social interaction or engagement. I will not be observing the teaching or staff interactions. I will not have looked at the information about the children when I come to the centre to observe them. I will not be able to look at the Checklists and Questionnaires until the observations have been completed.

The information collected from the observations and the forms will be statistically analysed as a trial of the draft *Canterbury Behaviour Screening Protocol* (CBSP). This information will be written up for my dissertation, and a report will be made to the Ministry of Education.

Please enclose all of the project materials, along with the signed consent forms, in the postage paid courier pack and post to my supervisor Dr. Kathleen Liberty. If you have, any questions please feel free to contact either Dr. Liberty or me.

Thank you for your time and cooperation,
Yours Sincerely,

Amy Smyth

Phone: 9810-061

Email: ams184@student.canterbury.ac.nz

Dr. Kathleen Liberty

Phone: 3642-545

Email: Kathleen.liberty@canterbury.ac.nz

Appendix 3

The CBSP Centre Booklet

Canterbury Behaviour Screening Protocol

Draft Version April 2005

Authored by Working Parties Affiliated with the Ministry
of Education's Department of Special Education, Early
Intervention¹



Picture from Department of Child Protective Services, County of Sacramento,
California. Downloaded on 30-3-2005 from www.sacdhhs.com.

EARLY CHILDHOOD CENTRE BOOKLET

For ages 2 ½ to 5 Years

Early Childhood Centre:

Address of Centre:

Phone of Centre:

¹ Working Party Participants: Cherin Abdelaal Selim, Robin Allen, Juanita Bassett, Carole Bourdot, Lynda Burns, Ann Campbell, Pam Clements, Rachel Cororan, Michelle Dawe, Jude Foster, Janice Howard, Jenny Hunter, Pippa Kennedy, Margaret Larking, Kathleen Liberty, Kate McNabb, Lisa Menary, Julia Nixon, Sue Ovens, Rose Rangi, Jan Reich, Sue Sealey, Debbie Smith, Amy Smyth, Gaye Urlwin, Rebekha Win, Shelley Zintl.

Table of Contents

Introduction

Implementation and Administration

General Purpose of Teacher Nomination

Procedure for the Study

1. Mentally Identify Children with Behaviour Concerns
2. Obtain Parent Consent
3. Rank Order the Children by Seriousness and fill in the Nomination Form in this booklet.
4. Complete the Child Booklet
5. Fill out the Feedback Form
6. Post everything in the enclosed envelope

Notes on the Nominating form for 2+ children on the “Aggressive/Oppositional Dimension”

Notes on the Nominating form for 2+ children on the “Withdrawn/Isolated” Dimension”

References

List of Abbreviations

TW = Te Whariki

PPG = Providing Positive Guidance

Introduction

Children who have adjustment problems at school are at high risk for a number of negative developmental outcomes (Walker et al., 1995). Children, who have trouble both academically and with peers, exhibit more antisocial behaviours towards their peers, are held in lower regard by their peers, and their cognitive development is not at an age appropriate level (Walker et al., 1995). Having both academic and behaviour problems has been found to be strongly related to later and more serious conduct problems (Walker et al., 1995).

When children enter an Early Childhood Centre they have to learn to interact socially with a group of peers and learn to meet the teacher's expectations as well as to work within Te Whariki (MOE, 1996; Walker et al., 1995). If a child does not learn to do this successfully, it can have a significant impact on the child's adjustment as an adolescent and adult (Walker et al., 1995). However, if these problems are dealt with when they appear during early childhood, research has shown that future problems such as academic failure, crime, and substance abuse may be avoided with early screening, prevention and intervention (Walker et al. 1995).

Responses to behaviour problems in young children often only occur after the child has been referred for a service evaluation, and can be delayed until it is too late to effectively address the problem (Walker et al., 1995). It is believed that a significant number of children in Early Childhood Education settings with behaviour problems are not receiving Special Education Services and that children displaying mild to moderate learning or behavioural problems are at the greatest risk of being overlooked (ERO, 2004; Walker et al., 1995).

In the Early Childhood Education budget 2004, it was announced that from 2007, all 3 and 4 year old children in New Zealand are to receive 20 hours per week of free Early Childhood Education taught by a trained Early Childhood teacher as indicated in Pathways to the Future, the Early Childhood Strategic Planning Document (MOE, 2002; Ministry of Education Website, 2004, www.minedu.govt.nz). Because of this, it is highly likely that there will be an influx of the 3 and 4 year olds being referred for Early Intervention services for behaviour difficulties, which may put a strain on resources. It is therefore likely a low cost, effective and sensitive screening system that can be used in Early Childhood Centres that is easy to use and score will be required. This will be used to ensure that the children with the highest need are being identified and that resources are going to these high need children, instead of resources being used in costly and time- consuming assessment of children that do not end up meeting the criteria for services (Walker et al., 1995). It is also necessary to have a fair and transparent system for identifying children, to avoid problems and conflicts when it may appear that certain families, neighbourhoods, or sectors are more able to access services (Bourke, 2004).

The Early Screening Project (ESP) (Walker, Severson, and Feil, 1995) is a measure used in Early Childhood settings in the United States to screen all children in order to identify the subset of children displaying aggressive/oppositional and

withdrawn/isolated behaviours who may need Early Intervention. The *Early Screening Project* (ESP) (Walker et al., 1995) is a three stage multiple gating system, which identifies at risk children aged 3 to 5 years). In the U.S model, the first 2 steps consist of teacher judgement – this is considered the “first gate” – in that only children with the most severe problems will be identified to pass through the ‘gate’ of teacher judgement. The subsequent “gates” involve assessment of the checklists completed by the teacher, with only the highest scoring children passing through the “gate.” The third step requires a specially trained observer to conduct observations of children’s behaviour and assesses the frequency and intensity of the problem behaviours. This gating procedure means that not every child passes to the next gate, meaning only the children with the highest need receive a more complex and time consuming assessment or intervention, hence the resources go to the children with the highest need (Walker et al., 1995). This procedure is being changed and adapted for the trial in Canterbury.

The draft *Canterbury Behaviour Screening Protocol* (CBSP) has been adapted from the *Early Screening Project* (ESP) by Group Special Education (Early Intervention) for use in Canterbury Early Childhood Education Centres using the Early Childhood Curriculum.

The current study is being conducted to do a small field trial of the *Canterbury Behaviour Screening Protocol* (CBSP) by seeing the similarities and differences in the children according to the following 3 comparisons:

1. The child’s nominated ranking made by the EC Teacher,
2. The child’s score on teacher completed checklists (scored by person who does not know the teacher’s ranking for the child); there might also be a score from the parent/carer checklist if they choose to complete one.
3. The child’s score on an observation completed by a trained observer who does not know the teacher’s nominated rank for the child and doesn’t know the score from the checklist.

At the individual child level, good outcome for the *Canterbury Behaviour Screening Protocol* (CBSP) would be that the child nominated as of the highest concern (#1), also scored the highest on the checklist and score the highest on the observation. In addition, the child nominated as of lower concern (#3, #4), would also score lower on the checklist and lower on the observation. This would mean that the *Canterbury Behaviour Screening Protocol* (CBSP) is showing a good discrimination between children with the most serious problems within the centre context.

Of course, a much more complex series of studies would need to be undertaken if the *Canterbury Behaviour Screening Protocol* (CBSP) were to be developed further following this small field trial.

Descriptors have been taken from the key New Zealand Early Childhood documents, and are identified for reference purposes.

Implementation and Administration

General Purpose of Teacher Nomination

The nomination of children gives each child in the centre the opportunity to be identified for either “aggressive/oppositional” or “withdrawn/isolated” behaviour, which relies on the Early Childhood Teacher’s judgement. The nomination procedure typically has two primary objectives:

1. To provide uniform procedures for the Early Childhood Teacher to use in screening and identification procedures.
2. To provide a possible structure for Early Childhood Teachers to use in referring children who may be in need of further evaluation or intervention services.

For this trial, you may nominate a child already receiving EI services, or you may nominate children who you believe need EI services for serious behaviour issues. However, nominating a child as part of this study will not be passed on to GSE-EI. You must continue to nominate children to GSE-EI in the usual way.

Procedure for the Study

1. Mentally Identify Children aged 2 ½ to 5 years with Behaviour Concerns

To nominate the children you have to identify children in your centres that most closely match either the aggressive/oppositional or the withdrawn/isolated behavioural profiles beginning on page 8.

Review the characteristic behaviour patterns of all children in the centre/session.

For the study, you must then mentally identify:

- 2 children that most closely match the aggressive/oppositional behaviour profile,
- 2 children that most closely match the withdrawn/isolated behaviour profile.
- 2 more children must be nominated to fit one or the other of the behaviour profiles for a total of 6 children

A single child cannot be nominated for both behaviour profiles on the same form. A child may show behaviours that are similar to both the aggressive/oppositional and withdrawn/isolated profiles. If this happens, please identify the child on the dimension that best seems to characterise their overall behaviour pattern. When you are completing step 4, you will be able to rate and describe all of the child’s behaviours.

You must identify 6 children in total. Please identify your most concerning children.

***As part of the study, it is necessary that children with the most concerning issues, and children with lesser concerning issues be identified (otherwise we will not be able to see if the *Canterbury Behaviour Screening Protocol* (CBSP) actually discriminates between them).

2. Obtain Parent Consent

Once you have mentally identified a child, please discuss the study with their parent/carer, using the enclosed parent information sheet to explain the study to them. If they consent, they need to sign the consent form. They may or may not choose to fill out the questionnaire on the reverse of the consent form.

Parents are free to consent or not consent to their child participating in the study. Parent input is valued and welcome (see back of parent form). Parents are certainly welcome, as far as the study is concerned, to assist in completing the forms for their child.

If a parent/carer does not consent, **DO NOT INCLUDE THAT CHILD ON YOUR NOMINATION FORM**. Please indicate on your feedback form whether or not a parent/carer did not consent to a nominated child being in the study. This will help us understand more about the scores and ratings for the study purposes.

If a parent does not consent to participate, **another child should be nominated instead**.

3. Rank Order the Children by Seriousness and Fill in the Nomination Form in this booklet.

Once you have nominated six children, please order the children for both the aggressive/oppositional and withdrawn/isolated behaviour profiles depending on the extent to which the children match them. Then, the children should be ordered from most serious need (#1) to lesser serious needs (#2, #3, etc.) depending on the extent that each child matches one of the behaviour profiles beginning on page 8.

4. Complete the Child Booklet

The Child Booklet contains questionnaires drawn up by the Working Party to identify in a standard way key issues that may be affecting each child. In addition, there is the opportunity for the Centre to provide an individualised assessment in the form of a Learning Story for each child you have nominated and for whom you have received consent.

5. Fill out the Feedback Form

The feedback form asks for your reaction and suggestions to the *Canterbury Behaviour Screening Protocol* (CBSP). Please take the time to complete it. It is stapled to the cover letter.

6. Post everything in the enclosed envelope

Post the following:

1. Completed Centre Booklet (This one).
2. Six signed parent consent forms.
3. Six completed Child Booklets.
4. Completed Centre feedback form.

Notes in the Nominating Forms

The Working Party has made reference for each descriptor to foundational documents of Early Childhood. These are identified by their initials in the forms that follow.

Ministry of Education (1996a). *Te Whariki. He Whariki Matauranga mo nga Mokopuna o Aotearoa. Early childhood curriculum.* Wellington: Learning Media. (TW)

Ministry of Education (1996b). *Statement of Desirable Objectives and Practices for Early Childhood Services in New Zealand.* Wellington: Ministry of Education. (DOP)

Ministry of Education (1998). *Providing positive guidance: Guidelines for early childhood education services.* Wellington: Ministry of Education. (PPG)

Ministry of Education (1998). *Quality in action: Implementing the revised statement of desirable objectives and practices in New Zealand early childhood services. Te Mahi whai hua.* Wellington: Learning Media.

Ministry of Education. (1999). *The Quality Journey He Haerenga Whai Hua: Improving quality in early childhood services.* Wellington: Learning Media.

Ministry of Education. (2002). *Pathways to the future Ngā Huarahi Arataki: A 10-year strategic plan for early childhood education.* Wellington: Learning Media.

References

Bourke, R. (2002). Early Childhood. In *Special Education 2000: Monitoring and evaluation of the policy. Final report phase three.* pp. 250-291. Wellington: Ministry of Education.

Education Review Office (2004). *Catering for diversity in early childhood services.* Wellington: ERO.

Ministry of Education (1996). *Te Whariki. He Whariki Matauranga mo nga Mokopuna o Aotearoa. Early childhood curriculum.* Wellington: Learning Media.

Ministry of Education. (2002). *Pathways to the future Ngā Huarahi Arataki: A 10-year strategic plan for early childhood education.* Wellington: Learning Media.

Ministry of Educations website (2005). *Budget 2004.* www.minedu.govt.nz

Walker, H.M., Severson, H.H, and Feil, E.G. (1995). *ESP Early Screening Project. A Proven Child Find Process.* Sophis West, Colorado.

Nominating Form for 2+ children on the “Aggressive/Oppositional” Dimension

“**Aggressive/Oppositional**” behaviour refers to behaviour problems that are directed outwardly by the child, toward the external social environment.

“Aggressive/Oppositional” behaviour involves behaviour that is considered inappropriate by early childhood teachers. *“Aggressive/Oppositional” behaviour does not refer to behaviour that only occurs during role-playing in imaginative or fantasy play.*

Non-examples of “Aggressive/Oppositional” behaviour would include all behaviour that is appropriate for a child’s age and the centre’s code of behaviour.

Examples of “Aggressive/Oppositional” Behaviour	Examples of non- “Aggressive/Oppositional” Behaviour
Harms others or the environment, or has to be prevented from doing so (PPG, pg. 26)	Cooperates and shares (TW Contribution, Goal 3)
Refuses to cooperate (PPG, p.33)	Listens to the teacher (TW Belonging, Goal 4)
Difficult to redirect when angry (PPG, p. 29)	Expresses anger in an appropriate way (TW Belonging, Goal 4)
Has tantrums (PPG, p. 29)	Can express needs and self-regulate their own emotions in a self-controlled way (TW Belonging, Goal 4)
Is hyperactive (PPG, p. 29)	Excess energy can be redirected into a more appropriate activity (TW Belonging, Goal 4)
Is difficult to redirect when being distracting to others (PPG, p. 29)	Stays on task when engaged in an activity (TW Well-being, Goal 1)
Takes other children's possessions without asking (PPG, p. 33)	Asks before taking something from another child (TW Contribution, Goal 3)
Does not follow the centre's code of conduct (PPG, p. 33)	Can be redirected into more cooperative activities (TW Belonging, Goal 4)

Directions: After you have received parent consent, please nominate 2 children most like the “aggressive/oppositional” examples given and write their names and date of birth below. Up to 2 more children may be identified. Please order the nominated children to the extent to which they match the examples.

* Please note this information is confidential to the study.

Surname	First Name	Date of Birth
1.		
2.		
3.		
4.		

Nominating Form for 2+ children on the “Withdrawn/Isolated” Dimension

“Withdrawn/Isolated” refers to behaviour problems that are directed inwardly by the child (i.e., away from the external environment), and that usually represent problems with self-esteem. “Withdrawn/Isolated” behaviours can be self-imposed and frequently involve behaviours and patterns of social avoidance and withdrawal. Non-examples of “Withdrawn/Isolated” behaviours would be social behaviour that shows social involvement with other children.

Examples of “Withdrawn/Isolated” Behaviour	Examples of non-“Withdrawn/Isolated” Behaviour
Has low activity levels (TW Well-being, goal 2)	Will start social interactions with peers (TW Communication, Goal 1)
Does not talk to other children (PPG, p. 22)	Has conversations with peers (TW Communication, Goal 2)
Is Withdrawn/Isolated and/or unassertive (PPG, p. 22)	Shows positive social behaviour with other children (TW Contribution, Goal, 3)
Avoids or withdraws from social situations (PPG, p. 22)	Will participate in social situations (TW Contribution, Goal, 3)
Prefers to play alone (TW Contribution, Goal 3).	Plays with other children (TW Contribution, Goal, 3)
Is reluctant to participate in games and activities (PPG, p. 33)	Participates in games and activities (TW Contribution, Goal, 3)
Does not stand up for himself/herself (TW Belonging, Goal 2)	Is assertive when necessary (TW Belonging, Goal 2)

Directions: After you have obtained Parent Consent, Please nominate 2 children most like the Withdrawn/Isolated examples given and write their names and date of birth below. Up to 4 children may be nominated. A total of 6 children should be nominated.

* Please note this information is confidential

Surname

First Name

Date of Birth

1.

2.

3.

4.

Observation of Nominated Children Form

Nominated Children (Must have parent consent) (please list here for student observer. This page will be removed from the booklet and given to the student observer).

First names only are fine)

1.

2.

3.

4.

5.

6.

Morning sessions begin at:

Afternoon sessions begin at:

Best times for observing are:

Please indicate when the centre has free play times: _____

Please indicate when the centre has group play times: _____

Times unsuitable for observing are:

Name of person to contact for observations:

Early Childhood Centre:

Address of Centre:

Phone of Centre:

Name of person completing:

Position:

Signature _____ Date: _____

Please tick if you would like an appointment made prior to observations ()

Please tick if any day is ok, but advance notice required

Appendix 4

The CBSP Child Booklet

Canterbury Behaviour Screening Protocol

Draft Version April 2005

Authored by Working Parties Affiliated with the Ministry of Education's Department of Special Education, Early Intervention²



CHILD BOOKLET

NAME OF CHILD _____

Early Childhood Centre:

Name of person completing:

Position:

Signature _____ Date: _____

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² Working Party Participants: Cherin Abdelaal Selim, Robin Allen, Juanita Bassett, Carole Boudot, Lynda Burns, Ann Campbell, Pam Clements, Rachel Cororan, Michelle Dawe, Jude Foster, Janice Howard, Jenny Hunter, Pippa Kennedy, Margaret Larking, Kathleen Liberty, Kate McNabb, Lisa Menary, Julia Nixon, Sue Ovens, Rose Rangi, Jan Reich, Sue Sealey, Debbie Smith, Amy Smyth, Gaye Urlwin, Rebekha Win, Shelley Zintl.

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The Behaviour Index

Optional: Learning Disposition Assessment

Child Background Questionnaire

Please Fill out a Separate Booklet for Each Child

List of Abbreviations

PPG = Providing Positive Guidance

TW = Te Whariki

Contextual Incidents Questionnaire

Purpose

The purpose of the *Contextual Incidents Questionnaire* on the next page is to find out about particular behaviours within the context of situations typically encountered by three and four year old children.

Directions

Carefully read each of the 12 Contextual Incidents on page 5 and for each of them shade the description from the list that the child has most often exhibited during their time at the Early Childhood Centre this year.

You do not have to have directly observed the behaviour in order to shade the critical event item, if you are aware that it has occurred as long as the information is accurate and reliable. For example, if another Early Childhood Teacher has told you that the child is destructive to property, shade that item.

Specify any serious behaviours of concern that do not appear on the list using item number 13.

Contextual Incidents Questionnaire

Directions: Shade in the circle for each *description* from the list below that this child has exhibited during their time at the Early Childhood Centre this year.

*Please note this information is confidential

1. How does this child cope when meeting new children or when encouraged to speak or play with others?

- ☐ persistently avoids interaction despite encouragement
- ☐ watches/observes and holds back initially, but then joins in (with or without encouragement)
- ☐ participates eagerly and enthusiastically
- ☐ plays alongside with a familiar child or children
- ☐ barges through and destroys play

2. How well does this child cooperate and show respect for others?

- ☐ has a circle of friends
- ☐ is able to participate in small group activities
- ☐ has difficulty negotiating with others
- ☐ shows no respect for others personal space and belongings
- ☐ Takes or damages others property intentionally

3. How well does this child cope with everyday peer and centre activities?

- ☐ enthusiastic and eager to be involved
- ☐ Quietly responsive and cooperative
- ☐ attends but displays indifference (i.e. lack of focus on the task, lack of facial expression)
- ☐ Short concentration span, constantly on the move
- ☐ Overly demanding of adult attention
- ☐ Excessively controlling of peers and play
- ☐ Overly dependent on others directions – helpless behaviour
- ☐ physically avoids interactions with others e.g. hides, runs away when approached or ignores approaches from others
- ☐ appears sad or depressed so much that it interferes with everyday peer and centre activities

4. Does this child appear to have a typical level of self-esteem and sense of personal worth?

- ☐ separates easily from main caregiver and shows a positive attitude towards self care
- ☐ has the confidence and ability to express their emotional needs
- ☐ lacks the confidence or willingness to try or persevere with new or challenging activities
- ☐ Shows inappropriate or a reduced range of responses to others or their own emotional needs (inappropriate laughter, excessive crying, and flat facial expression)
- ☐ has difficulty tolerating a change of routine or uncertainty
- ☐ The child does not soothe them self or seek support from others when upset
- ☐ is self abusive (biting, cutting self etc)

5. How appropriately does this child play with others?

- ☐ child is able to practise self alongside peers in small and large group activities
- ☐ can express self in social situations both verbally and non verbally
- ☐ child persistently avoids, withdraws from or has difficulty interacting with peers
- ☐ child shows enthusiasm and is able to initiate interaction with peers
- ☐ child will problem solve and self regulate in times of frustration (e.g. when excluded from a game by peer group)
- ☐ waits to be invited to interact with peers
- ☐ tries to seriously physically injure another using weapons or objects

6. Does this child show any behaviour that is inappropriate?

- ☐ knows limits and boundaries of acceptable behaviour and is able to behave accordingly (e.g. controls own behaviour, expresses self verbally, complies with adult's instructions)
- ☐ is hurtful to self (e.g. hitting, biting self, pinching self, banging head, picking skin, pulling hair)
- ☐ is destructive to property (e.g. tears books, throws toys or objects, smashes windows, sets fires, pulls toys apart – all in a deliberate manner)
- ☐ causes physical and/or emotional pain to people or animals (e.g. intimidates, stand over tactics, pushes, hits, and pulls hair/fur)
- ☐ displays disruptive/defiant behaviour (whining, clinging, pestering, sulking, swearing, teasing, put downs)

7. Do you have any concerns about this child's physical well-being?

- ☐ shows evidence of physical abuse
- ☐ Child shares and retells positive stories from home (e.g. going on a special outing, caregiver giving a cuddle because of something he/she did)
- ☐ Child's basic needs are being met (e.g. appropriate clothing, hygiene good, is fed, appropriate energy levels)
- ☐ Child talks about appropriate discipline for their displays of difficult behaviour at home (e.g. talks about parent taking toys off them for short periods of time because they threw it)
- ☐ Child follows daily routines but copes with and adapts to and accepts change

8. Describe this child's awareness/understanding of their body and its functions.

- ☐ Shows age appropriate knowledge about their bodies and how they function (e.g. able to identify body parts and physical states – happy, sad, sick, sore)
- ☐ Frequent inappropriate, and persistent interest in body function and genitals (own and/or others)
- ☐ Sexual knowledge too great for their age
- ☐ Touches/rubs self and/or others in a sexualised manner regardless of setting or redirection
- ☐ I have reason to believe he/she has been sexually abused

9. How energetic is this child?

- ☐ Fully involved in their activity
- ☐ Consistently animated and energetic
- ☐ Generally active but seeks some quiet periods
- ☐ quiet, but watchfully alert
- ☐ often lacks energy or animation, little response to encouragement

10. How interested is this child in participating in activities?

- ☐ persistently returns to preferred activity
- ☐ is reluctant at first but then participates enthusiastically
- ☐ will participate only if coaxed
- ☐ participates in a range of activities enthusiastically
- ☐ used to take part enthusiastically but now shows little interest

11. Describe this child's toilet behaviours.

- ☐ developmentally appropriate
- ☐ wets/soils frequently because of a medical condition
- ☐ wets/soils frequently because they are anxious
- ☐ wets/soils frequently to control others
- ☐ has to be reminded, but if reminded, no accidents

12. How does this child behave at Kai times/eating times?

- ☐ usually chews and eats food appropriately and safely
- ☐ exhibits difficulty with chewing and swallowing
- ☐ eats a limited range of foods
- ☐ food must be presented in a particular way
- ☐ frequently refuses to eat
- ☐ quickly gobbles food
- ☐ frequently vomits after eating

13. Does this child exhibit any other behaviours of concern?

The Behaviour Index

Purpose

The purpose of the *Behaviour Index* is to determine how often a child is engaging in specific behaviours over the past year at the Early Childhood Centre. There are a range of items on the index about children's behaviour in terms of social interaction, aggressive behaviour and participation.

Instructions

Carefully read each of the 36 Behaviours on the next page and circle the number (1 to 5), for each item that most corresponds to how often the child has exhibited the stated behaviour at the Early Childhood Centre during the past year. The numbers 1 to 5 are a continuous scale and used to estimate the frequency at which the behaviour described occurs.

The Behaviour Index

1: Not at all 2: Rarely 3: Sometimes 4: Most of the time 5: Almost all the time

1	Follows the centres limits and boundaries (Belonging, Goal 4)	1	2	3	4	5
2	Refuses to participate in games or activities with other children during free (unstructured) play (PPG, p. 33)	1	2	3	4	5
3	Harms adults or has to be prevented from doing so (PPG, p. 26)	1	2	3	4	5
4	Gains other children's attention in an appropriate verbal/non verbal manner (TW Communication, Goal 1 and 2)	1	2	3	4	5
5	Verbally responds to a peer's initiation (TW Communication, Goal 2)	1	2	3	4	5
6	Demonstrates non-cooperative behaviours when directed (shouts back, ignores teacher etc) (PPG, p.33)	1	2	3	4	5
7	Harms other children or has to be prevented from doing so (PPG, p.26)	1	2	3	4	5
8	Expresses anger appropriately (without becoming violent or destructive) (TW Contribution, Goal 3)	1	2	3	4	5
9	Has tantrums (PPG, p. 29)	1	2	3	4	5
10	Responds inappropriately when other children try to interact socially with him/her (PPG. p. 33)	1	2	3	4	5
11	Laughs with classmates (TW Contribution, Goal 3)	1	2	3	4	5
12	Damages others' property (materials, personal possessions) (PPG, p.26)	1	2	3	4	5
13	Cooperates with other children (TW Contribution, Goal 3)	1	2	3	4	5
14	Tests or challenges the centres limits/rules (PPG, P. 6)	1	2	3	4	5
15	Engages in conversations longer than 30 seconds (TW Communication, Goal 2)	1	2	3	4	5
16	Displays highly inappropriate feelings in normal situations e.g. laughing/crying (PPG. p. 22)	1	2	3	4	5
17	Is teased/bullied by peers (TW Belonging Goal 2)	1	2	3	4	5
18	Gains teachers attention in appropriate ways (TW Belonging, Goal 4)	1	2	3	4	5
19	Spontaneously contributes during a group discussion (TW Belonging, Goal 2)	1	2	3	4	5
20	Creates a disturbance during activities (noisy, bothers other children etc) (PPG. p. 33)	1	2	3	4	5
21	Readily attempts new activities (TW Exploration, Goal 1)	1	2	3	4	5
22	Is left out or unnoticed by peers (TW Belonging, Goal 2)	1	2	3	4	5
23	Ignores teacher's warnings or redirections (PPG. p.29)	1	2	3	4	5
24	Participates well in group activities (TW Contribution, Goal 3)	1	2	3	4	5
25	Has a positive view of self (TW Wellbeing, Goal 2)	1	2	3	4	5
26	Is very demanding of the teacher's attention (PPG. p.22)	1	2	3	4	5
27	Makes offensive gestures (PPG. p. 33)	1	2	3	4	5
28	Follows teacher directions (TW Belonging, Goal 4)	1	2	3	4	5
29	Displays anxious/fearful behaviour in daily situations (TW Wellbeing, Goal 3)	1	2	3	4	5
30	Pouts or sulks (PPG. p.33)	1	2	3	4	5
31	Uses offensive language (PPG. p.33)	1	2	3	4	5
32	Peers actively avoid this child (TW Belonging, Goal 2)	1	2	3	4	5
33	Initiates positive social contact with peers (TW Contribution, Goal 3)	1	2	3	4	5
34	Needs redirection before he/she will stop an inappropriate activity or behaviour (PPG. p.29)	1	2	3	4	5
35	Is overly affectionate with others (touching, hugging, kissing, hanging on, etc) (PPG. p.22)	1	2	3	4	5
36	Verbally initiates to a peer or peers (TW Communication, Goal 2)	1	2	3	4	5

OPTIONAL Learning Story: Learning Disposition Assessment

Instructions

If you have a Learning Story for the nominated child, you are welcome to attach it to this document, or to complete another one. Learning Stories provide information and insight not provided by other forms of assessment (Carr, 2001; p. 24-25; 123-124; 44-45).

Directions

“Learning dispositions are about responsive and reciprocal relationships between the individual and the environment. They form a repertoire of familiar and privileged processes of contribution and communication. “ (p. 22). The learning dispositions are briefly described below.

The 5 Learning Dispositions and some of the dispositions children develop are abbreviated below. (For more information, please see Carr (2001) or the EC Assessment Exemplars from the MOE.)

Provide a positive (giving the child credit) description of how the child is developing one or more learning dispositions (identified below). Focus on describing what the child is doing, rather than what s/he is not doing. Please focus on something that happened in the last month. You may use a Learning Story from the child’s portfolio. You may use your own format or the format on the next page to describe the learning story.

1. Taking an interest

In artefacts/objects; In activities; In a social community
Developing interests
Developing a sense of self
Asks questions
Is enthusiastic
Is inclined to communicate through talking, drawing, gesturing and so on.
Is able to pay attention
Selects or constructs activities for self
Makes connections across places
Sensitive to the occasion
Recognition of opportunities
Has knowledge that enables being involved
Moves rapidly from one activity to another
Has strategies for participating

2. Being involved

Is able to sustain involvement in one activity on occasion
Develops creative ideas, brings own ideas and interests to project or play
Is able to pay attention for increasingly longer periods of time

3. Persisting with difficulty or uncertainty

Enthusiasm for persisting with difficulty
Problem seeking or exploration
Problem solving
Recognising error as part of the pathway to a successful solution

4. Communicating with others

Expresses ideas or points of view
Expresses ideas in a range of ways (colouring, painting, constructing, arguing, negotiating, talking)
Expresses ideas with increasing complexity

5. Taking responsibility

Listens to other children
Shares ideas with other children
Negotiates with other children
Considers advice
Recognises other children’s needs/helps others
Recognise justice/resist injustice

Learning Disposition Assessment Form

Te Whariki Strand	Please ✓ learning disposition(s) recorded	Learning Story	
<p>Belonging Mana Whenu</p> <p>Well Being Mana Atua</p> <p>Exploration Mana Aoturoa</p> <p>Communication Mana Reo</p> <p>Contribution Mana Tangata</p>	✓		
	Finding Something of Interest Here		
	Being Involved		
	Engaging with challenge and persisting when difficulties arise		
	Expressing an Idea or Feeling or point of view		
	Taking Responsibility		

Age at Learning Story : _____ **Date of Learning Story:** _____

What's the context? (Describe the general situation in which the learning disposition was noted)

Please feel free to include any drawings, paintings or sketches that might illuminate the Learning Disposition.

Child Background Questionnaire

Child's Name: _____

Date of Birth: _____

Age: _____

Attendance pattern (Please fill in attendance times):

	Monday	Tuesday	Wednesday	Thursday	Friday
Arrival					
Finish					

Months/Years attending this Centre:

Sources

The reflections in this booklet are: (Please tick all that apply)

- ☐ based on my/our staff's own ongoing observations of this child
- ☐ based on parents/carers reported experiences
- ☐ based on a information from other agencies (e.g. other agencies, a Plunket Nurse, PAFT)

Other information about the child

1. Has the child passed their vision acuity test?

☐ yes ☐ no ☐ not screened.

2. Has the child passed their hearing screening test?

☐ Yes ☐ no ☐ not screened.

3. Does this child present with any of the following?

Asthma ☐ no ☐ yes

Otitis Media (Glue ear) ☐ no ☐ yes

Allergies ☐ no ☐ yes

Reflux ☐ no ☐ yes

Diabetes ☐ no ☐ yes

Other

If yes, list medications required (if any):

4. Is this child on any other regular medication? If yes, please give name and dosage if known

5. How often does the child complain of physical symptoms of severe headaches, stomachaches, dizziness, vomiting or nausea (e.g. “I feel sick”, “I’ve got a sore tummy” and “my head hurts”.)

- ☐ Never or very seldom
- ☐ Occasionally
- ☐ Regularly

6. If you feel that a family situation is affecting the child’s behaviour, please explain briefly.

7. In your opinion what do you think is the main function for behaviour that is of concern to you?

- ☐ To get attention
- ☐ To communicate (because the child does not have a more appropriate way of communicating)
- ☐ For control/power
- ☐ To get something they want
- ☐ To avoid a situation
- ☐ To manipulate people
- ☐ Other (please explain)

8. In your opinion what is the reason or cause for the behaviour of concern?

- ☐ To avoid something they don't want or like
- ☐ Because he/she is bored
- ☐ Because he/she does not know what to do
- ☐ Because of issues at home
- ☐ The child has a history of being inconsistently responded to
- ☐ Because the child is angry
- ☐ Because of a lack of communication skills
- ☐ Because the child is unwell/health issues
- ☐ The child is unable to express feelings verbally/non verbally
- ☐ The child does not have the skills required for the task/s
- ☐ The child does not feel the appropriate emotion for the event (e.g. smiling while hitting another child)
- ☐ Other: please explain

Appendix 5

The CBSP Parent/Caregiver Letter, and Consent Form

Health Sciences Department
University of Canterbury
Private Bag 4800
Christchurch
30 April 2005

Study of the Draft Canterbury Behaviour Screening Protocol (CBSP)

Dear Parent/Carer,

My name is Amy Smyth. I am a student at the University of Canterbury and am currently completing a Masters of Health Sciences endorsed in Early Intervention. As part of my degree, I am required to complete a research component, and I would like to invite your child to participate in the research.

The topic of the research is children's behaviour. The *Canterbury Behaviour Screening Protocol* (CBSP) has been developed in collaboration with professionals from Ministry of Education, the University of Canterbury and the Christchurch College of Education. The aim of the project is to see if the *Canterbury Behaviour Screening Protocol* (CBSP) is able to tell the differences between children with different levels of behaviour, specifically "aggressive/oppositional", and "withdrawn/isolated" behaviours. Both children with serious problems and other children are being asked to participate. Your child has been identified by his/her teacher as one of the children for this study, and your child's teacher can explain to you why your child has been selected.

Your child's participation in this study will involve your child's Early Childhood Teacher completing questionnaires. Two 10-minute observations of your child by me, a Research Student in Health Sciences, are also involved. Your child's social interaction and engagement would be observed while they are playing at the Early Childhood Centre. There will be no direct contact with your child at any point in the project by the researcher.

You and your child's participation in this project is completely voluntary, and consent for participation can be withdrawn at any time without penalty. No changes in your child's early childhood participation will occur because of your decision not to participate.

The results of this study may be published, but there will be complete confidentiality of data. The identity of participants will not be made public at any time without consent. Results will be converted to statistics for analysis. The project has been approved and reviewed by the University of Canterbury Human Ethics Committee.

This project is being carried out under the supervision of Dr. Kathleen Liberty. If you have any questions or concerns you have about your child participating in this project please contact either your child's teacher, or Dr. Liberty. They will be pleased to discuss these with you.

Please keep this letter for your personal records and indicate your decision on the consent form as soon as possible.

Thank you for your time and cooperation,

Amy Smyth

Phone: 9810061

Email: ams184@student.canterbury.ac.nz

Dr. Kathleen Liberty

Phone: (03) 3642545

Email: Kathleen.liberty@canterbury.ac.nz

Canterbury Behaviour Screening Protocol (CBSP)

CONSENT to Participate FORM

I have been invited to participate with my child in a study on children's behaviour. I have heard and understood an explanation of the study (Information Sheet dated 30 March 2005). I have been given an opportunity to discuss the study and ask questions, and am satisfied with the answers I have been given.

I have had enough time to consider whether my child will take part in the study and to discuss my decision with the researcher or person of my choice.

I know whom to contact if I have questions about the study.

I understand that my child's participation in this research is confidential and that no material, which could identify my child or me, will be used in any study reports or made available to anyone else without my approval in writing.

I understand that my child taking part in this study is my choice and that my child may withdraw at any time and this will not affect my child's learning at school.

I have explained this project to my child and they are willing to take part.

* I agree to my child's Early Childhood Teacher completing forms and checklists regarding my child's behaviour **YES/NO**

* I am willing for the research team to observe my child playing at the centre for ten minutes on two occasions. **YES/NO**

* I am willing for the research team to store and dispose of my confidential data as described **YES/NO**

* I wish to receive a summary of the results of this study **YES/NO**
(The summary will be given to the Centre to give to you)

I CONSENT TO TAKE PART IN THIS STUDY

Child's Name:

Child's Birthdate:

Parent/s or Caregiver's Name:

Signature of Parent/s or Caregiver:

Date Signed:

Appendix 6

Construction of the CBSP

Introduction

The draft *Canterbury Behaviour Screening Protocol* (Ministry of Education, Early Intervention, 2005) was developed on 9 August 2005, by a working party consisting of staff from Group Special Education, Early Intervention, and the researcher and supervisor involved in the study from the University of Canterbury. The working party divided into groups and using the as a template effectively rewrote and renamed the stage one and two forms and their instructions for these measures to be suitable for use in New Zealand early childhood centres. The *CBSP* forms were adapted to fit with the New Zealand early childhood curriculum *Te Whāriki* (Ministry of Education, 2000) and page references were made to either this curriculum or the specific Early Childhood Education Curriculum Behaviour Document *Providing Positive Guidance* (Ministry of Education, 2000) on the forms in relation to specific items. The working party participants were, in alphabetical order: Cherin Abdelaal Selim, Robin Allen, Juanita Bassett, Carole Bowdot, Lynda Burns, Ann Campbell, Pam Clements, Rachel Cororan, Michelle Dawe, Jude Foster, Janice Howard, Jenny Hunter, Pippa Kennedy, Margaret Larking, Kathleen Liberty, Kate McNabb, Lisa Menary, Julia Nixon, Sue Ovens, Rose Rangi, Jan Reich, Sue Sealey, Debbie Smith, Amy Smyth, Gaye Urlwin, Rebekha Win, Shelley Zintl. The working party drafted the *CBSP*.

Construction of the CBSP: Centre Booklet

The *Centre Booklet* was created by the working party for each early childhood centre in order to introduce the *CBSP* as well as giving original, detailed instructions for the centres to complete the procedure. In Stage One of the *ESP*, teachers are given separate forms for nominating children from their centres that exhibit either

“externalising behaviours”, or “internalising behaviours”. The forms contained either a definition of “externalising behaviour” or “internalising behaviour” followed by examples and non-examples of these behaviours. For example, an example given for “externalising behaviour” is “arguing” and a non-example given is “cooperating and sharing”. An example given for “internalising behaviour” is “low activity levels”, and a non-example given is “having conversations”. Teachers were instructed to review the behaviour patterns of all children in their centre aged 3 to 5 years, and select five children from the centre for each behaviour profile that most closely match each of the behavioural descriptions. When drafting the *CBSP* nominating forms, the working party made a number of changes. Firstly, the titles “externalising and internalising” were changed to “aggressive/oppositional” and “withdrawn/isolated”. These titles were changed, as “externalising and internalising” were not terms considered to be widely used in New Zealand, and there were concerns as to whether early childhood centre staff would be familiar with these terms. Definitions and examples and non-examples for both new terms were essentially kept the same, but the wording was changed to relate to the early childhood curriculum *Te Whāriki* (Ministry of Education, 2000), and page references to this document were also made. For example, “stealing” an example given on the *ESP* (Walker et al., 1995) of an “externalising” behaviour was changed to “takes other children’s possessions without asking”. Teachers could nominate children aged 2.5 years to 5 years, instead of 3 to 5 years on the *ESP* (Walker et al., 1995). This was changed as the working party considered children 2.5 years to be old enough to demonstrate the behavioural problems associated with each profile.

Construction of the CBSP: Contextual Incidents Questionnaire

This questionnaire was adapted from the *ESP: Critical Events Index* (Walker et al., 1995), and the *Adjustment Scales for Preschool Intervention (ASPI)* (Noone-Lutz, Fantuzzo and McDermott, 2002). The *ESP: Critical Events Index* (Walker et al., 1995) is a 16-item list, which assesses whether a child has exhibited any of 16 specific behaviour problems during the year. Examples include “Sets fires”, and “vomits after eating”. Teachers are instructed to place a tick beside any of the items that a child has exhibited one or more times during the centre year. In drafting this form for the *CBSP*, the working party made several changes. The original target items from this index were still included, but the wording and procedure, including the title of the questionnaire, was changed to make it more appropriate for the New Zealand Early Childhood Curriculum *Te Whāriki* (Ministry of Education, 2000). The working party considered that the items on this questionnaire were serious and could be potentially shocking and upsetting for centre staff and parents. To minimise this, instead of simply ticking an item if the child has exhibited the behaviour this year, a question was created, and several choices both positive and negative were offered along with the target item, with the teacher instructed to shade the appropriate item for each child. For example, instead of just listing the target item “is self-abusive”, the question “does this child appear to have a typical level of self-esteem and personal worth” was created. The target item is still offered along with other positive and negative items such as “has the confidence and ability to express their emotional needs”, and “has difficulty tolerating a change of routine or uncertainty”. This procedure was adopted from the *Adjustment Scales for Preschool Intervention* (Noone-Lutz, Fantuzzo, and McDermott, 2002), as according to its authors, the

procedure avoids focussing solely on negative child behaviours, by also emphasizing the positive behaviour strengths exhibited by the children.

Construction of the CBSP: Behaviour Index

This index combined 4 scales from the *ESP* (Walker et al., 1995), the “*Aggressive Behaviour Scale*”, the “*Social Interaction Scale*” and the “*Combined Frequency Indexes*” for both Maladaptive and Adaptive behaviour into one 36-item scale. In the *ESP* (Walker et al., 1995), teachers completed the “*Aggressive Behaviour Scale*” and the “*Combined Frequency Indexes*”, for children rated as “externalisers”, and teachers completed the “*Social Interaction Scale*” and the “*Combined Frequency Indexes*” for children rated as “internalisers”. In comparison, the working party decided that for the *CBSP*, teachers would complete all four measures for all children as they believed that a number of children exhibit both “aggressive/oppositional” and “withdrawn/isolated” behaviours. All items from the four scales were essentially kept the same for scoring purposes, but the working party changed any wording not appropriate to the New Zealand Early Childhood Curriculum *Te Whāriki* (Ministry of Education, 2000), and added a page number reference to each item to either *Te Whāriki*, or *Providing Positive Guidance* (Ministry of Education, 2000). For example, “volunteers for show and tell” was replaced by “readily attempts new activities”, as early childhood centres may not have “show and tell”. The working party changed the four scales to one scale, as they considered one scale would make it more appealing, easier, less confusing and less time consuming for the early childhood teachers to complete. The working party also believed that embedding the positive and negative items together in one scale, is more appealing than giving a teacher or parent a measure of entirely negative behaviours, which is inconsistent with New Zealand’s

Early Childhood Curriculum *Te Whāriki*'s (Ministry of Education, 2000) philosophy of concentrating on children's strengths, as opposed to weaknesses. The rating system from the *ESP* (Walker et al., 1995) was changed from a five-point scale of 1 or 2 for "never", 3 or 4 for "sometimes", and 5 for "frequently", to 1 point for "not at all", 2-points for "rarely", 3-points for "sometimes", 4-points for "most of the time", and five-points for "almost all the time". The working party believed offering more descriptors of the scoring would increase the accuracy of the centre staff's responses. Like on the *ESP* (Walker et al., 1995), the four scales were scored separately, and this was completed by the student using overlays to block out the non-required items on the *Behaviour Index*, and comparing the children's scores to the norms in the *ESP Manual* (Walker et al., 1995).

The *ESP: Aggressive Behaviour Scale* contained 9- items relating to aggression, and is used to estimate the frequency with which each aggressive item occurs. Example items include "has tantrums", and uses obscene language". The working party took one item from this scale is teased, neglected and/or avoided by peers" and split it into 3 separate questions, giving the *CBSP* version 11-items. For the purposes of scoring, the researcher took the average score of these 3 questions, added it to the score of the other 8 items, and recorded this number as the aggressive behaviour scale score.

The *ESP: Social Interaction Scale* contained 8-items relating to social interaction and is used to estimate the frequency with which each social interaction item occurs. Sample items include "shares laughter with classmates", and "verbally responds to a peers initiation". Three of the items on this scale were altered as the working party considered that the items described would not occur in the centres. For

example “freely takes a leadership role” was altered to “has a positive view of self”, and “volunteers for show and tell” was altered to “readily attempts new activities”.

The *ESP: Adaptive Behaviour Index* contained 8-items relating to adaptive or positive behaviours and is used to show the frequency with which each adaptive behaviour item occurs. Sample items include “Follows teacher’s directions”, and “cooperates with other children”.

The *ESP: Maladaptive Behaviour Index* contained 9-items relating to maladaptive or negative behaviours and is used to show the frequency with which each maladaptive behaviour occurs. Sample items include “pouts or sulks”, and tests or challenges teacher’s limits/rules”.

Learning Disposition Assessment (Carr, 2001)

A learning disposition assessment was included in the *Child Booklet*, which was provided by the supervisor of the project. *Learning Disposition Assessments* (Carr, 2001) are an assessment method used in early childhood centres, which positively describe how a child is developing in the areas of “taking an interest”, “being involved”, “persisting with difficulty or uncertainty”, “communicating with others” and “taking responsibility”. *Learning Disposition Assessments* (Carr, 2001) focus on what the child is doing rather than what they cannot do, and this assessment was included in the *Child Booklet* in order to identify children’s behavioural strengths as well as weaknesses, which fits with the New Zealand Early Childhood Curriculum *Te Whariki* (Ministry of Education, 2000).

Construction of the CBSP: Child Background Questionnaire

This questionnaire is original and was included in the *Child Booklet*. It asked the centre staff to collect demographic information about the child, such as their name, date of birth, how long they have attended the centre and their attendance pattern. In addition, the centre staff were asked if the information provided in the child booklet was based on the centres staff's observations, parent's observations, or other agencies observations. Information about the child's vision, hearing, general health and family situation was asked to see if these were possible contributing factors in regards to the child's behaviour.

Appendix 7

Data on Individual Subjects

Appendix 7

Table 1 Individual Subject Characteristics.

Child ID#	Age in Months	Gender	#Hours Attended Per Week	Passed Vision Test?	Passed Hearing Test?	#Health Problems
1-A	36	Male	37.00	n/a	n/a	0
1-B	37	Male	47.50	n/a	n/a	0
1-X	55	Male	47.50	Yes	Yes	0
1-Y	35	Male	40.00	n/a	n/a	0
1-Z	44	Female	35.00	Yes	No	0
2-A	57	Male	n/a	n/a	n/a	n/a
2-B	53	Male	n/a	n/a	n/a	n/a
2-C	57	Male	n/a	n/a	Yes	0
2-D	55	Female	n/a	n/a	n/a	n/a
2-X	52	Male	n/a	n/a	n/a	n/a
2-Y	60	Male	n/a	n/a	n/a	n/a
3-A	51	Female	17.00	Yes	Yes	0
3-B	55	Female	17.00	Yes	Yes	0
3-X	53	Female	17.00	Yes	Yes	0
3-Y	46	Female	7.50	Yes	Yes	0
4-A	34	Male	21.00	n/a	n/a	0
4-B	57	Male	20.50	Yes	Yes	0

Child ID#	Age in Months	Gender	#Hours Attended Per Week	Passed Vision Test?	Passed Hearing Test?	#Health Problems
4-C	35	Female	27.50	n/a	n/a	0
4-X	53	Female	4.00	n/a	n/a	n/a
4-Y	31	Male	26.00	n/a	n/a	0
4-Z	33	Male	10.00	n/a	n/a	0
5-A	45	Male	41.25	n/a	n/a	0
5-B	39	Male	25.50	Yes	Yes	0
5-C	44	Male	52.50	Yes	Yes	1
5-D	51	Female	28.50	Yes	Yes	0
6-A	47	Male	7.50	Yes	Yes	0
6-B	47	Male	7.50	Yes	Yes	0
6-C	57	Female	17.00	Yes	Yes	0
6-X	52	Male	7.50	Yes	Yes	0
6-Y	53	Male	17.00	Yes	Yes	0
6-Z	57	Female	17.00	Yes	Yes	0
7-A	56	Female	25.00	Yes	Yes	0
7-B	40	Male	24.00	n/a	n/a	n/a
7-C	37	Male	27.50	n/a	n/a	n/a
7-D	45	Female	11.00	n/a	n/a	n/a
7-X	44	Male	10.00	n/a	n/a	n/a

Child ID#	Age in Months	Gender	#Hours Attended Per Week	Passed Vision Test?	Passed Hearing Test?	#Health Problems
8-A	34	Male	37.00	Yes	Yes	1
8-B	39	Female	37.00	Yes	Yes	0
8-C	54	Male	18.00	Yes	Yes	0
8-X	35	Female	9.00	Yes	Yes	0
8-Y	30	Male	17.00	Yes	Yes	0
8-Z	49	Male	35.00	Yes	Yes	0
9-A	37	Female	18.25	Yes	Yes	0
9-B	55	Male	21.75	Yes	Yes *	1
9-C	42	Female	15.50	n/a	n/a	3
9-X	39	Male	12.25	No	No	2
9-Y	54	Female	6.50	Yes	Yes	2
9-Z	39	Female		Yes	Yes	2
10-V	37	Male	18.00	n/a	n/a	0
10-W	32	Male	11.00	n/a	n/a	0
10-X	39	Female	16.50	Yes	Yes	1
10-Y	53	Female	12.00	Yes	Yes	1
10-Z	53	Female	12.00	Yes	Yes	0

* = Referral and a pass on re-test

n/a = not available

Appendix 7 Table 2 Individual Subject's Scores (S) and Risk Levels (R) on Study Measures

Demographics					Teacher Nomination		Teacher Checklists														Observer	
ID	Centre	Gender.	Age (mo.)	Hrs/ wk	Category	Rank	CIQ S	R	AgB S	R	SIS S	R	AdB S	R	MaB S	R	Comb S	R	S	R	S	R
1a	1	m	36	37	a/o	1	2	At	25	Ex	20	At	15	Ex	34	Ex	12	Ex	71	Ex		
1b	1	m	37	48	a/o	2	1	N	30	Ex	22	At	21	Ex	32	Ex	11	Ex	65	Ex		
1x	1	m	55	48	w/i	1	2	At	24	Ex	22	At	26	At	28	Ex	10	Ex	16	N		
1y	1	m	35	40	w/i	2	0	N	15	At	29	N	32	N	24	H	3	At	32	N		
1z	1	f	44	35	w/i	3	2	At	15	H	29	N	29	At	26	Ex	8	H	21	N		
2a	2	m	57	<i>n.a.</i>	a/o	1	2	At	21	Ex	24	At	25	At	27	Ex	10	Ex	47	At		
2b	2	m	53	<i>n.a.</i>	a/o	2	3	H	25	Ex	17	At	20	Ex	30	Ex	13	Ex	59	H		
2c	2	m	57	<i>n.a.</i>	a/o	3	2	At	20	Ex	22	At	26	At	25	H	9	H	24	N		
2d	2	f	55	<i>n.a.</i>	a/o	4	1	N	12	N	32	N	38	N	17	N	1	At	32	N		
2x	2	m	52	<i>n.a.</i>	w/i	1	1	N	10	N	18	At	26	At	12	N	3	At	16	N		
2y	2	m	60	<i>n.a.</i>	w/i	2	2	At	12	N	11	At	19	Ex	22	At	7	H	91	Ex		
3a	3	f	46	8	a/o	1	0	N	15	H	24	At	30	N	21	At	5	At	70	Ex		

Nominated Category: w/i= withdrawn/isolated; a/o= aggressive/oppositional; Risk Levels: (E=extreme; H=high; At= At risk; N=no risk)

Demographics					Teacher Nomination		Teacher Checklists														Observer	
ID	Centre	Gender.	Age (mo.)	Hrs/ wk	Category	Rank	CIQ		AgB		SIS		AdB		MaB		Comb		S	R	S	R
3b	3	f	55	17	a/o	2	1	N	21	Ex	23	At	26	H	26	Ex	10	Ex	100	Ex		
3x	3	f	53	17	w/i	1	2	At	9	N	17	At	28	At	13	N	4	At	95	Ex		
3y	3	f	51	17	w/i	2	0	N	10	N	20	At	31	N	12	N	1	At	53	H		
4a	4	m	34	21	a/o	1	0	N	25	Ex	19	At	21	Ex	28	Ex	10	Ex	76	Ex		
4b	4	m	57	21	a/o	2	3	H	21	Ex	30	N	28	At	23	H	9	H	39	N		
4c	4	f	35	28	a/o	3	3	H	16	Ex	19	At	21	Ex	24	H	11	Ex	25	N		
4x	4	f	53	4	w/i	1	1	N	14	At	19	At	17	Ex	24	H	8	H	66	Ex		
4y	4	m	31	26	w/i	2	2	At	20	Ex	13	At	11	Ex	26	Ex	12	Ex	35	N		
4z	4	m	33	10	w/i	3	4	Ex	21	Ex	19	At	15	Ex	25	H	13	Ex	77	Ex		
5a	5	m	45	41	a/o	1	1	N	19	Ex	22	At	24	H	32	Ex	10	Ex	54	H		
5b	5	m	39	26	a/o	2	3	H	23	Ex	27	At	24	H	24	H	11	Ex	63	Ex		

Nominated Category: w/i= withdrawn/isolated; a/o= aggressive/oppositional; Risk Levels: (E=extreme; H=high; At= At risk; N=no risk)

Demographics					Teacher Nomination		Teacher Checklists												Observer	
ID	Centre	Gender.	Age (mo.)	Hrs/ wk	Category	Rank	CIQ		AgB		SIS		AdB		MaB		Comb		S	R
5c	5	m	44	53	a/o	3	7	Ex	31	Ex	25	At	22	H	32	Ex	16	Ex	1	N
5d	5	f	51	29	a/o	4	3	H	26	Ex	28	N	26	H	30	At	11	Ex	16	N
6a	6	m	47	8	a/o	1	0	N	25	Ex	21	At	21	Ex	29	Ex	10	Ex	31	N
6b	6	m	47	8	a/o	2	0	N	26	Ex	27	At	20	Ex	30	Ex	10	Ex	44	At
6c	6	f	57	17	a/o	3	1	N	18	Ex	31	At	28	H	27	Ex	10	Ex	55	Ex
6x	6	m	52	8	w/i	1	3	H	14	N	18	At	21	Ex	19	N	7	H	57	H
6y	6	m	53	17	w/i	2	4	Ex	24	Ex	18	At	20	Ex	31	Ex	14	Ex	5	N
6z	6	f	57	17	w/i	3	3	H	14	At	23	At	25	H	23	H	9	H	8	N
7a	7	f	56	25	a/o	1	4	Ex	24	Ex	31	N	23	Ex	29	Ex	13	Ex	10	N
7b	7	m	40	24	a/o	2	3	H	34	Ex	15	At	19	Ex	31	Ex	13	Ex	35	N
7c	7	m	37	28	a/o	3	1	N	23	Ex	26	At	24	H	31	Ex	10	Ex	35	N
7d	7	f	45	11	a/o	4	4	Ex	18	Ex	25	At	27	At	20	At	10	Ex	34	N

Nominated Category: w/i= withdrawn/isolated; a/o= aggressive/oppositional; Risk Levels: (E=extreme; H=high; At= At risk; N=no risk)

Demographics					Teacher Nomination		Teacher Checklists												Observer	
ID	Centre	Gender.	Age (mo.)	Hrs/ wk	Category	Rank	CIQ S	R	AgB S	R	SIS S	R	AdB S	R	MaB S	R	Comb S	R	S	R
7x	7	m	44	10	w/i	1	3	H	16	At	17	At	24	H	17	N	7	H	20	N
8a	8	m	34	28	a/o	3	2	At	22	Ex	29	N	27	At	22	At	7	H	38	N
8b	8	f	39	36	a/o	1	3	H	17	Ex	29	N	31	N	28	Ex	9	H	46	H
8c	8	m	54	18	a/o	2	1	N	16	At	26	At	24	H	22	At	6	H	55	H
8x	8	f	35	9	w/i	1	2	At	14	At	22	At	18	Ex	14	N	7	H	90	Ex
8y	8	m	30	27	w/i	2	3	H	19	Ex	18	At	16	Ex	25	H	12	Ex	27	N
8z	8	m	49	45	w/i	3	3	H	21	Ex	21	At	21	Ex	25	H	12	Ex	19	N
9a	9	f	37	31	a/o	1	3	H	30	Ex	23	At	23	Ex	32	Ex	13	Ex	24	N
9b	9	m	55	25	a/o	3	1	N	22	Ex	32	N	30	N	26	Ex	7	H	21	N
9c	9	f	42	19	a/o	2	2	At	26	Ex	31	N	24	H	35	Ex	10	Ex	21	N
9x	9	m	39	19	w/i	1	0	N	20	Ex	18	At	23	H	31	Ex	9	Ex	56	H
9y	9	f	54	13	w/i	3	2	At	21	Ex	19	N	24	H	25	H	9	Ex	23	N
9z	9	f	39	20	w/i	2	0	N	17	Ex	25	At	28	At	22	At	6	H	31	N

Nominated Category: w/i= withdrawn/isolated; a/o= aggressive/oppositional; Risk Levels: (E=extreme; H=high; At= At risk; N=no risk)

Demographics					Teacher Nomination		Teacher Checklists												Observer	
ID	Centre	Gender.	Age (mo.)	Hrs/ wk	Category	Rank	CIQ		AgB		SIS		AdB		MaB		Comb		S	R
							S	R	S	R	S	R	S	R	S	R	S	R		
10v	10	m	37	18	w/i	1	1	N	10	N	27	At	30	N	14	N	2	At	72	Ex
10w	10	m	32	11	w/i	2	0	N	11	N	22	At	30	N	15	N	1	At	39	N
10x	10	f	39	17	w/i	3	0	N	11	N	28	N	34	N	19	N	0	N	7	N
10y	10	f	53	12	w/i	4.5	1	N	14	At	31	N	34	N	21	At	3	At	36	N
10z	10	f	53	12	w/i	4.5	1	N	14	At	31	N	35	N	21	At	3	At	14	N

Nominated Category: w/i= withdrawn/isolated; a/o= aggressive/oppositional; Risk Levels: (E=extreme; H=high; At= At risk; N=no risk)