Emotional Disturbance In A Sample Of Children In The Care Of Child Welfare

A Report Submitted To The Edmonton Region, Family And Social Services

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It is clear that the mental health of children in care is a high priority among care givers. The literature contains numerous references to treatment programs that are provided, and the negative effects on mental health of particular forms of abuse and neglect are studied intensively. However, the number of studies on the prevalence of mental or emotional disorder in populations of children in care is limited.

Those studies that have been reported indicate that children in care are, as most practitioners would predict, at much higher risk for psychopathology than those who have not been in care. For example, Wolkind and Rutter (1973) found that English 10 and 11 year olds with emotional disorders (based on teacher and parent ratings) were much more likely to have been in care than those who did not display an emotional disorder (ratios ranged from nearly 6:1 to over 15:1 depending on the sample and on the judged severity of the disorder). Bohman and Sigvardsson (1980) studied a sample of Swedish children who were eligible for adoption. Teacher ratings were obtained at age 11 and again at age 15. They found that these children were several times more likely to show maladjustment than normal controls, and that , at age 15, those who had remained in foster care were more likely to be disturbed than those who had been adopted. It is interesting to note that this difference was not apparent at age 11. Frank (1980) examined interview and questionnaire ratings of psychosocial adjustment made by two professionals taken from a sample of American six to twelve year olds in long-term foster care. A second rating was made five years later. Frank's results showed nearly 80% maladjustment when re-assessed. Finally, Fanshel and Shinn (1978) examined American children in foster care, assigning ratings of abnormal, normal, or "suspect" based on clinical psychologists' use of

observation and projective test results. Over the five-year period of this investigation, just over 50% of the subjects were normal on each of the three testings. Nearly 25% were rated as emotionally maladjusted.

These four studies, which differed in methodology, in sub-sample of children in care that were studied, and which represented three different countries, all found a strong relationship between child welfare involvement and mental disorder. This prompted an earlier study of 50 children in Alberta (Thompson & Fuhr, 1992) which, using tests that were well validated, found even higher rates of psychopathology than the earler studies. The purpose of the present study is, in general, to expand on the Thompson and Fuhr study with the collection of additional data that would aid in the planning of services for children in care. More particularly, the goals of this project, as specified by the Edmonton Region Children's Mental Health Steering Committee, were (see Minutes of April 7, 1988):

1. The study will provide information on the psychopathology of the child welfare population.
2. The study will enable the development of standardized classification systems for children in child welfare. This product will not be provided directly by the study, but can be developed following the study, based on the experience of using the various tests.
3. The study will provide a partial answer to the residential resources required in the Region that are needed by certain children. The information will reflect the opinions of the social workers on the adequacy of present placements of children.
4. As a by-product, the study will generate file information for each child in the sample. These test results will require further interpretation to staff, but will primarily alert staff to those children who appear to require more attention.
5. The study will provide information on the nature of services, other than placements, that these children require, and the report will include more effective ways of assessing and meeting these needs.

METHOD

Subjects

The children selected to participate in the study were between the ages of 6 and 17, and were drawn from the caseloads of the thirteen district offices within the Edmonton Region

of Social Services. The children fell under one of the following custody types: Temporary Guardianship Order (TGO), Permanent Guardianship Order (PGO), Custody Agreement (CA) with Guardian, Support Agreement (SA) with Guardian, and Supervision Order. Using these criteria, there were 2051 children eligible to be interviewed in all (see Appendix A).

Given the budget allocated for the project (6 STEP research assistants/interviewers) and assuming a certain level of child unavailability, it was agreed that from 800-900 children would be contacted for the study, and as close as possible to an equal number of the four major status types would be interviewed (supervision orders were included with the SAs). To meet these requirements, 882 children were selected from the original population. As the TGO's were underrepresented in the original population, it was agreed that all of the children with this custody type (129) would be contacted for the study.

Of the sample of 882, 160 agreed to participate in the study and were interviewed. The interviewers were also asked to record the reasons why the other 722 children contacted did not take part (see Appendix B).

Contact was not made for 462 of the original sample. The majority of non-assessments were the result of reasons beyond the control of the researchers, and did not produce an obvious sampling bias. Where actual contact was made, 30% refused, and another three percent were deemed to be too emotionally disturbed to be assessed, resulting in an effective participation rate of 67%.

Chi-square tests were utilized in order to determine if the children interviewed were representative of the original population according to basic demographic variables (sex, age, custody type, and location of the district office administering services). The interviewed sample was representative of the original population for age ($X^2 = 1.142$, df=1, p<.29), and sex ($X^2 = .068$, df=1, p<.79). The sample was not representative by District Office ($X^2 = 71.324$, df=12, p<.001). However, when the thirteen District Offices were grouped into the two categories of Edmonton and "not Edmonton", the interviewed sample was representative of the original population ($X^2 = 1.350$, df=1, p<.25), leading to the conclusion that the interviewed sample was representative in regard to urban versus rural children. The interviewed children were not representative of the original population

according to custody type (X^2 = 79.376, df=3, p<.001). The interviewed sample was overrepresented with TGOs and underrepresented with Support Agreements. This was to be expected though, the original study design had planned for an equal number of interviews for each of the four major status types, even though these status types were not distributed in that manner throughout the population.

Assessment Instruments

Child Behavior Checklist. (CBCL) (Achenbach & Edelbrock, 1983). This scale is designed to record, in a standardized format, the behavior problems and competencies of children aged 4 to 18 yrs. The scale provides measures of internalizing (neurosis, anxiety), externalizing (conduct disorder, hyperactivity), and social competence.

Eysenck Personality Questionnaire. (EPQ) (Eysenck & Eysenck, 1975). This questionnaire was completed by the child. Measures of psychoticism, neuroticism, and potential for criminality are produced.

Children's Depression Inventory. (CDI) (Kovacs, 1983). This is a 27-item self-rated depression scale. The CDI produces a single depression score based on a wide variety of symptoms. The scale is sensitive to changes in depression over time, and to the severity of the depressive disorder.

Culture-Free Self-Esteem Inventory. (SEI) (Battle, 1981). The form for 6-15 year olds produces four scale scores; general, social, school and parental self-esteem. The adult form (for those 16 to 18 years) provides measures of general, social and personal self-esteem.

Ontario Child Health Study Child Behavior Checklist. (OCHS) (Boyle et al., 1987). This test is modelled from the CBCL and utilizes many of the questions from the CBCL. The OCHS yields scores for four diagnostic categories: conduct disorder, hyperactivity, somatization (for childen aged 12 and older), and emotional disorders. For the present study, the researchers included the extra questions from the OCHS (not found in the

CBCL) at the end of the CBCL. Eight questions were added to the adult report CBCL, and 11 questions were added to the youth self report CBCL).

Information Sheet. The information sheet was designed to gather file information for each child participating in the study. This sheet was to be completed by the child's social worker. The questionnaire measured several variables, including: basic demographic variables (age, sex, ethnic background, etc.), child's duration in the child welfare system, documented reasons for receiving child welfare status, social worker's opinions regarding the reason for child welfare status, placement type, adequacy of placement, social worker's ratings of the present mental health of the child (and if professional clinical services were required), total number of placements for each child, and background information regarding the family structure of the child in question. These variables were to be correlated with the results from the other diagnostic tests.

Design and procedure.

The assessment instruments were administered by six research assistants. The children were tested at their place of residence. The research assistants handed out the self reports (SEI, CDI, CBCL self report, OCHS self report, and EPQ) which the children completed. Only those children aged 12 or older filled out the CBCL and OCHS self reports. The parent, foster parent, or person in care of the child, filled out the CBCL and OCHS. The child's social worker was contacted later in order to complete the information sheet for the child.

For the analysis of the test results, raw scores were converted into percentiles and T-scores for the CDI, SEI, and the adult and youth self report CBCLs (social competence, internalizing, and externalizing scales). Raw scores were converted to quotient scores for the EPQ. A simple "threshold" score for psychopathology was used for the adult and youth self report OCHS results. In terms of estimating the presence or absence of psychopathology (for all tests except the OCHS), two levels were considered for analysis. In the first case, those falling in the upper 10% (based on population norms) were deemed to be "abnormal". This is in line with many studies which show a point prevalence of at least 10% in the general population (Dohrenwend et al., 1980). The second, more restrictive level considered only those falling above the 98th percentile, as has been

suggested by Achenbach and Edelbrock (1983) as indicating a disorder serious enough to require treatment.

RESULTS

Sample Characteristics

Personal. There was a near to equal gender split among the children in the sample; 52% boys and 48% girls. The mean age was 12.6 yrs (SD= 3.28). In terms of religious affiliation, the majority were either Catholic (44%) or Protestant (41%), with 3% reporting one of a number of other religions, and the remaining 12% apparently having no affiliation. Fifty-three percent were Caucasian, 41% were of Aboriginal descent (17% First Nations, and 24% were Métis), with the remaining 6% reported to be “other” (1%) or mixed (5%).

History Prior to coming into care, the living arrangements of the children reflected a disruptive upbringing. Only a minority of children lived with both biological parents (19%). In the majority of the "broken homes" it was the biological mother most often present (36% of all cases as a single parent and 24% with a step father). Ten percent lived with the biological father, 7% with adoptive parents, and 3% lived with extended family members.

Reasons for Care	N	%
Parent-child problem	122	76
Parental Personal Problems	92	58
Special needs of child	80	50
Withdrawal of Parental Care	41	26
Lack of Care (Env. Factors)	36	23

Precipitating Problem		
Unwilling/Unable to Care	62	48
Parent/Child Substance Abuse	34	26
Child’s Special Need	27	21
Parent-Child Conflict	23	18
Neglect	20	16
Sexual Abuse	17	13
Problems of Parent	16	12
Other	13	10
Physical Abuse	10	8
Unknown	31	19*
*Based on all 160 cases; all other values were based on the 129 cases with data		

Only a very few of the subjects (1.4%) were "only children". On average, families had 3.7 children (SD= 1.8), with a range of 1 to 9.

The reasons for coming into care, as noted in the client files, are summarized above left. Note that more than one reason could have been entered for each child, thus the total is greater than 100%.

As a comparison to these "official" reasons, each child’s social worker was asked to provide an opinion (table on left) on the major problem(s) leading to the then current

Child Welfare involvement.

Status	N	%
TGO	27	18
PGO	56	37
Custody Agreement	29	19
Support Agreement	32	21
Supervision Order	5	3
Closed	1	<1

Child Welfare status of the sample is shown on the left.

The mean length of time in care was 44.0 months (SD= 51.8), with a range of one to 184 months. The mean number of placements per child was 4.8 (SD= 3.7), ranging from a low of 1 to a high of 19.

Placement	N	%
Foster Home	54	36
Group Home	19	13
Institution	17	11
Parent-Counsellor	7	5
Independent	6	5
Receiving Home	1	<1
Private guardian	1	<1
Parent/Relative	44	30
Total	147	
Missing	13	

The placement of each child at the time of assessment is shown in the adjoining table:

The children that were assessed in this study were registered with 13 different district offices, thus providing a fairly representative sample across the Region. The distribution of the sample across these district offices can be found in Appendix C.

Psychopathology.

Except for the Ontario Health Study (OCHS) scales, the definition of the term "psychopathology" will be based on an individual's score in comparison to a general population score. Thus one psychopathology measure will be used when an individual scores above the 90th percentile. A second, more conservative, measure reflects scores above the 98th percentile. In the case of the OCHS scales, classification is made on the basis of disorder vs no disorder, with no reference to percentiles. The accompanying table contains the proportion of

The number of children scoring in the psychopathological range on each scale (excluding OCHS scales)

	Upper 10%			Upper 2%		
Scale	N	%	X^2	N	%	X^2
Psychoticism (EPQ)	40	27	40**	26	17	166**
Neuroticism (EPQ)	18	12	0.3	6	4	2.5
Criminality (EPQ)	38	24	33.6**	19	12	79.6**
Internalizing (ACH)	82	53	303**	50	32	698**
Externalizing (ACH)	94	61	423**	60	39	999*
Social Competence	107	70	575**	69	45	999**
Depression (CDI)	26	17	6.9**	1	<1	1.5
Self-Esteem (SEI)	23	15	3.4*	5	3	1.0

*p<.05 **p<.01 Note: For X^2=999, X^2 > 1000

children showing psychopathology on each of the scales (excepting the OCHS). Psychoticism, Criminality, Internalizing, Externalizing, and Social Competence show a greater number of subjects scoring above the 90th and 98th percentile than would be expected from the general population. For example, 40 children (27%) scored in the upper 10% on Psychoticism where we would have expected 15 individuals in a normal population. Neuroticism, Depression and Self-Esteem showed little, if any, difference at either the 90th or 98th percentile levels.

The results of the analysis of OCHS scores are shown in the table below. Note that the rates of all disorders are higher in the Child Welfare sample than in the general population, but that conduct disorder is particularly high, with the proportion in the sample being 6.3 times higher than that in the general population. Overall, nearly one-half of the children showed one or more of the diagnoses used in the Ontario Health Study.

The proportion of children scoring in the psychopathological range on the OCHS scales

Scale	N With Disorder	CW Sample %	General Popul. %	Relative Risk
Conduct Disorder	53	34.4	5.5	6.3
Neurosis	31	20.1	10	2.0
Hyperactivity	34	22.1	6.3	3.5
Somatization*	12	12.0	7.5	1.6
Any Disorder	75	46.9	18.1	2.6

*refers only to children over 12 yrs

Using all of the various scores that were derived, the proportion of children showing psychopathology on one or more of the scales was determined. The accompanying table shows that 86% of the sample scored in the psychopathological range (upper 10%) on at least one of the measures. Looking at a stricter criterion; two or more scales above the 90th percentile, we find that 69% of the children fall into this category. When considering a more conservative measure (the upper 2%), we find a similar rate of 68%.

Proportion of Children Showing Psychopathology

# in Clinical Range	Upper 10%	Upper 2%
1 or more	86%	68%
2 or more	69%	42%
3 or more	54%	23%
4 or more	33%	9%
5 or more	19%	3%
6 or more	7%	1%

An analysis similar to that above, but with the OCHS scales substituted for the CBCL measures, produced somewhat lower (but still high) estimates of the prevalence of emotional disorder. That is, 70% of the sample scored above the 90th percentile on at least one scale and 45%

showing psychopathology on two or more. Fifty-six percent scored above the 98th percentile on at least one measure.

Social worker estimates

Social worker and psychological test estimates of psychopathology

	Disorder		Severe Disorder	
Scale	SW	Test	SW	Test
Global	59%	69%	6%	42%
Conduct Disorder	44%	-	10%	34%
Neurosis	38	-	6%	20%
Hyperactivity	41%	-	9%	22%
Somatization*	14%	-	0%	12%
Internalizing	45%	53%	7%	33%
Externalizing	48%	61%	11%	39%
Social Competence	43%	70%	N/A	45%

It is important to remember that it is the social workers who bear the major responsibility for the initial evaluation of the mental stability of their clients. Thus the social worker for each child was asked for his/her opinion on the mental status of that client. Estimates were gained for global mental health and for a number of specific diagnoses that corresponded to those derived from the psychological tests. The results of this are shown in the accompanying table. The test values for these particular disorders have been included for comparison purposes. Note that, in general, the social workers produce more conservative estimates than those derived from the testing process.

Appropriateness of placement

The social workers were asked to rate the appropriateness of the placement of each child. In only three cases (2%) was the present placement deemed to be inappropriate. In another 62 cases (42%), a rating of "adequate" was used. The remaining 56% were thought to be optimally placed. In the cases where the children were not optimally placed, the social workers were asked to record the placement that they felt would be best for the child (Note: the proportion deemed optimal did not differ significantly across the various placement categories). By subtracting the number of proposed placements for a particular category from the current utilization for that category, we can derive a rough estimate in the change in need. For example, in the table below, there are currently 23 individuals in foster homes where the placement is rated as either adequate or inappropriate. However, optimal placements would result in only 12 foster home placements. This results in a drop in the foster home requirement by 11 spaces. This represents a 20% reduction in the total

of foster home placements (in comparison to the total of 54 foster home placements overall).

	% of Current	Optimal	Change	Total
Foster Home	22	12	-10	-19%
Group Home	5	2	-3	-16%
Institution	8	4	-4	-24%
Treatment Institution	0	3	+3	
Parents/Relatives	12	13	+1	+2%
Independent	4	5	+1	+17
Parent/Counsellor Home	0	4	+4	+57
Adoption	0	4	+4	+??
Private Guardian	0	2	+2	+200%

The three additional treatment institution places that were asked for refer to a perceived need for substance abuse treatment in two cases, and for mental health treatment that apparently is not currently available in existing institutions. A value of zero is found for current parent-counsellor homes because all seven placements in these residences were deemed optimal. The zero value for adoptions reflects the fact that, of course, none of the children in the study had been adopted. According to the social workers, four were ready to be permanently placed in adoptive homes.

While the data shown above provide global estimates of the need for the various placements, the type of analysis used masks some interesting findings. For example, in six cases, those living in foster homes were assigned optimal placements that were also foster homes. Presumably, this may reflect a lack of confidence in the foster parents in particular cases. However, in at least two instances, a move from a non-Native foster home to a home with Native foster parents was recommended. Similarly, in five cases an optimal placement for children living with their parents was to remain with the parents, but with the addition of "support". As "support" is actually a service, rather than a placement, it's mention here is somewhat in error. It is an important point, however, and may have appeared more often had it been specifically asked about. Other social worker observations. In general, the social workers were pessimistic about the likeliehood that a child would return to his or her parents. The analysis (excluding PGO's) showed that 48% were thought to have no chance at all, another 41% had less than a 50% chance of being reunited, and in only 11% were the odds of being returned to one's family better than 50:50.

Nearly all of the children had one or more siblings (88%). One percent were recorded as being only children, and the information was unavailable for the remaining 11%. The mean number of children per family was 3.7, with a range up to a maximum of nine. Of those with siblings, only 42% were able to live with them. Forty-seven percent of these children had no contact whatsoever with their parents, 31% had periodic contact, and 22% had frequent contact.

Correlates of Psychopathology In this section, a variety of measures will be correlated with the global measure of psychopathology discussed earlier (see Table 4). For current purposes, three levels of psychopathology will be used; 1. None evident, 2. one scale in the disordered range, and 3. two or more scales showing psychopathology.

Status. The results of this analysis are shown in the accompanying table. Note that children under TGOs, PGOs, and Custody Agreements are at similarly very high levels of psychopathology, with those under support or supervision orders showing lower, but still meaningful, levels of disturbance. Overall differences are statistically significant ($X^2 = 21.36$, $p<.002$).

	Number of Disorders		
Status	None	1	2+
TGO	11%	7%	82%
PGO	11%	9%	80%
Custody Agreement	7%	10%	83%
Support/Supervision	22%	35%	43%

Sex. There were no meaningful differences between boys and girls in this sample.

Age. There was no statistically significant relationship between age and disorder rate overall. However, there was a tendency for those aged 14-18 yrs to be more likely to have two or more disorders (75%) than those under age 14 yrs (64%). This difference does not appear to be due to the length of time in care (longer for older children), because this variable is not related statistically to psychopathology.

Religion. Although not statistically significant ($p<.08$), there was an interesting trend. That is, while 17% of catholics and 16% of protestants showed no disorder, only 8% of those reporting no religion were without evidence of psychopathology.

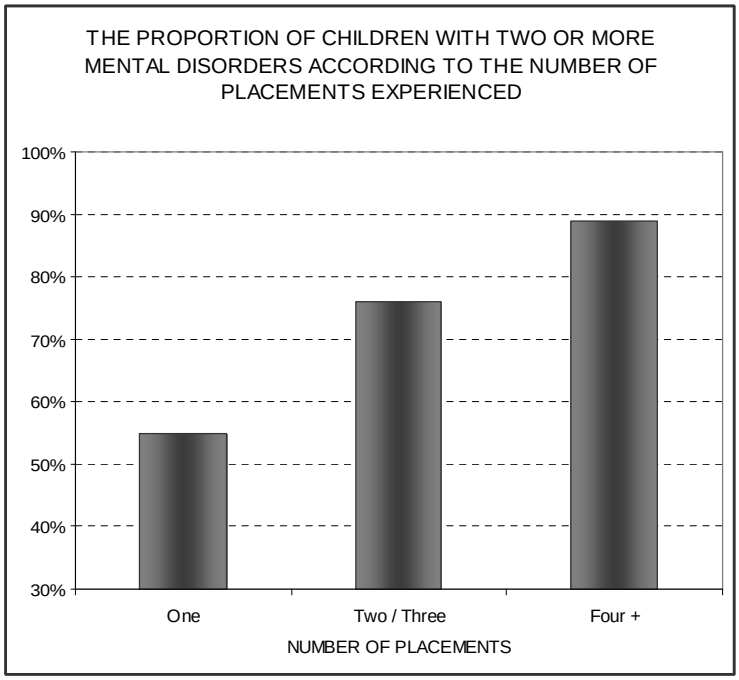
Race. Looking only at those who were either Indian or Caucasian, there were no statistical or meaningful differences between the two groups.

	Number of Disorders		
	None	1	2+
Foster Home	13	11	76
Group Home	5	0	95
Institution	6	6	88
Parents/Relative	21	29	50

Current placement. It should be no great surprise that those in group homes and institutions showed the highest levels of psychopathology ($X^2 = 18.97$, $p<.005$). Those living with their parents/relatives had the lowest levels, with those in foster homes appearing in the middle. The figures are shown alongside.

Appropriateness of placement. There was no difference between those optimally placed and those "adequately" placed.

Current treatment. Those in treatment at the time of testing were more likely to show disorder on one or more measures (93%) than those who had not been in treatment (79%) ($X^2 = 12.78$, $p<.002$). It is interesting to note that 15 of the 18 (83%) showing no disorder were, in fact, receiving treatment. Furthermore, as just noted, 79% of those not in treatment showed a disorder. However, many of these would have received treatment earlier on; 86% of the sample having received clinical services at some point prior to the commencement of the study.



Number of placements. Those with only one placement were less likely to have a disorder (79%) than those with multiple placements (91%). In terms of severity, 55% of those with one placement showed two or more disorders, with the figure for those with 2 or 3 placements being 76%, and for those with four or more placements, 89% had two or more disorders (see figure on left).

Family contact. Those who lived with their siblings were less likely to show psychopatholgy than those who had brothers or sisters, but did not live with them ($X^2 = 6.49$, $p<.04$). There was no difference, however, associated with parental visiting. The figures for both of these analyses are shown on the right.

# of Disorders	None	1	2+
Lives With Sibs			
Yes	18%	22%	60%
No	10%	11%	79%
Parent Visits			
Never	8%	12%	80%
Periodic	9%	6%	85%
Frequent	13%	9%	78%

DISCUSSION

Study goals

1. Psychopathology of the Child Welfare population

It is clear from the data that the proportion of children actively suffering from an emotional disorder is very high. The lowest estimate (42%) came from the use of a conservative (upper 2% on 2+ scales) criterion for CBCL plus self-report scale scores. The highest suggested that 86% showed psychopathology on at least one measure when a 10% general population rate was used as the criterion. In view of the fact that there was not total agreement between the social worker estimates and the test results, combining the two would have produced prevalence estimates well over the 90% figure. The difficulty here is to choose the prevalence figure that is most accurate, and most useful. An argument in favour of a conservative estimate is that the administration of a relatively large number of scales increases the likeliehood of finding psychopathology that is not really there ("If you give enough tests, you are sure to find something!". On the other hand, the use of the 10% criterion cannot be said to be overly liberal in that prevalence studies of the general population consistently find rates in the 17-20% range. It is probably safe to say that at least 70% of children in care show evidence of current emotional disorder. Less conservative estimates would, of course, show higher rates, but the 70% figure is high enough to cause some degree of alarm.

It is important to note that, as in the case of our earlier study (Thompson & Fuhr, 1992), rates are highest for those disorders that are more difficult to treat (conduct disorder,

psychoticism, externalizing), but do not differ from the general population on self-esteem and depression.

2. Development of a standardized classification system

This will be developed in a separate discussion paper. Four possibilities exist: The use of (1) the CBCL, (2) the OCHS, (3) the self-report battery (EPQ, CDI, SEI), or (4) some combination of the above. In all cases, administration and scoring are relatively simple, and the information valuable.

3. Residential resources

An analysis of the social workers' ratings suggests a need for an increase in, or creation of, parent-counsellor homes, with some children being moved to independent living status or being placed for adoption. This, at he expense of the traditional residential options (i.e. foster homes, group homes, institutions). Furthermore, there was a call for more support for families who had custody of their children, and for more appropriate foster home placement. Taken in total, the social workers did not endorse the creation of new residential resources to replace those that should be reduced, rather they seem to favour a change in social work practice.

4**. Clinical file information**

An information sheet, containing all test scores, was prepared for each child. This was reviewed by a clinical psychologist and then returned to the appropriate district office to be used by that office and retained in the client file.

5. Service requirements

In a general sense, the high level of psychopathology suggests that the current emphasis on mental health by the Edmonton Region of Family and Social Services is justified. It would appear that a general screening of all new cases would be in order. This is a traditional response, however; the magnitude of the problem suggests that some "big picture" thinking applied to this issue may bear some fruit.

The results of this study, and those from the earlier study on Edmonton Region wards (Thompson & Fuhr, 1992) indicated that social worker and test score agreement was not as high as it could be. It would seem advisable to provide some in-service training to the social workers on recognition, diagnosis, and intervention (referral, counselling, family

work, etc.). This may not be an onerous task, as many of the social workers already have some sophistication in this area. Much of the work will be on agreement on common systems and nomenclature.

It should be recognized that the existence of a high level of mental disorder in a group does not imply that the answer is to focus entirely on "treatment" services provided by specialized professionals. In this study emphasis was given to alternate services which appear to be quite appropriate. For example, the provision of "support" to families and the use of parent-counsellor homes. One could add some emphasis on the importance of sibling cohabitation and on efforts to create stable, if not permanent, placements for all wards. Having said this, in cases where treatment is required, it is important to recognize that this sample of children present disorders that are difficult to treat, suggesting that selection of the treating professional is an extremely important part of the process. In this regard, social workers, like anyone else, often lose control of the client. It may thus be advantageous to include a "how to handle mental health therapists" in any future social work inservice training programs.

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Appendix A
Original Population Distribution

District Office	SA	CA	TGO	PGO	Total
Fort Road	177	53	31	3	264
Whyte Avenue	91	31	17	42	181
Centennial	138	58	11	347	554
Westmount	220	47	15	2	284
Edson	12	7	1	14	34
Grande Cache	8	3	1	3	15
Sherwood Park	33	15	2	61	111
St. Albert	17	12	8	48	85
105 St	95	22	22	1	40
Parkland	82	26	9	60	177
Leduc	27	5	5	32	69
Hinton	19	4	0	7	30
Millwoods	70	30	7	0	107
Total	989	313	129	620	2051

* includes supervision orders

Appendix B.
Reason for Not Participating

	Total		Relevant	
Reason	N	%	N	%
Refused (SW, Parent, or Child)	71	8%	71	30%
Unavailable	93	11%		
Child Emotionally Unstable	8	<1%	8	3%
Ill / Hospitalized	3	<1%		
File Closed	85	10%		
Not Specified*	462	52%		
Actually Tested	160	18%	160	67%
Total	882	100%	239	100%

* This category contains those children who were picked for the study, but with whom contact was not made.

Appendix C.
Final Sample Distribution

District Office	N	%
Fort Road	8	5.3%
Whyte Avenue	22	14.7%
Centennial	53	35.3%
Westmount	19	12.7%
Edson	11	7.3%
Grande Cache	4	2.7%
Sherwood Park	2	1.3%
St. Albert	4	2.7%
105 St	11	7.3%
Parkland	2	1.3%
Leduc	5	3.3%
Hinton	4	2.7%
Millwoods	5	3.3%
Total	150	100
Missing	10	