

House of Tiny Treasures
Services Outcomes Report
2009-2011

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INTRODUCTION

Among the most innovative programs provided by SEARCH is the *House of Tiny Treasures* (HTT). Within this program, homeless children (ages 1-6) are provided educational, psychosocial and health services geared to assisting them in achieving success in all phases of their early development. In order to assess the effectiveness of the programs, an evaluation was commissioned that addressed the following questions:

1. Will children who participate in HTT educational programs demonstrate developmental progression in the 10 factors measured by the Creative Curriculum survey on consecutive administrations.
2. What is the effect on development for children who attend art therapy, play therapy, speech therapy or a combination of these modalities?
3. Can changes in development be accounted for exclusively by age?
4. Does time in the program affect rates of change in developmental scores?

PROCESS

Within 30 days of admission to the HTT educational program, children are assessed using a standardized instrument associated with that program, Creative Curriculum, to determine their developmental baseline. The assessment instrument lists 150 tasks for the child to perform with ratings based on specific performance criteria that are scored from 1-4. These 150 tasks are grouped into the 10 categories listed above.

This Outcomes Report uses these scores as well as a score that was an aggregation of the 10 categories and a difference score that compared each child's aggregated score at baseline and at their final assessment. The findings from these assessments are reported using both descriptive and inferential statistical methods.

LIMITATIONS

Findings from the analysis of the performance scores achieved by the participants in the HTT program are compelling, as will be demonstrated in the *Findings* section below. While valid, there are confounding factors that limit the generalization of the results at this time. These include:

1. Sections of several patients records were lost in weather-related floods encountered in 2008. Thus, the data set used in this analysis included only those records for which baseline and at least one follow up assessment were available.
2. Because of the missing records and somewhat differing times children were enrolled in HTT programs, final scores reflect different intervals between assessment and final assessment.
3. The Creative Curriculum assessment that was used in this data set had not been normed by age. Thus, it is only possible to speculate the degree to which age accounted for developmental changes. However, a statistical model has been provided that controls for age.
4. Staff were not trained in the techniques for standardized administration of the instrument and thus the interpretation of observations were inconsistent.

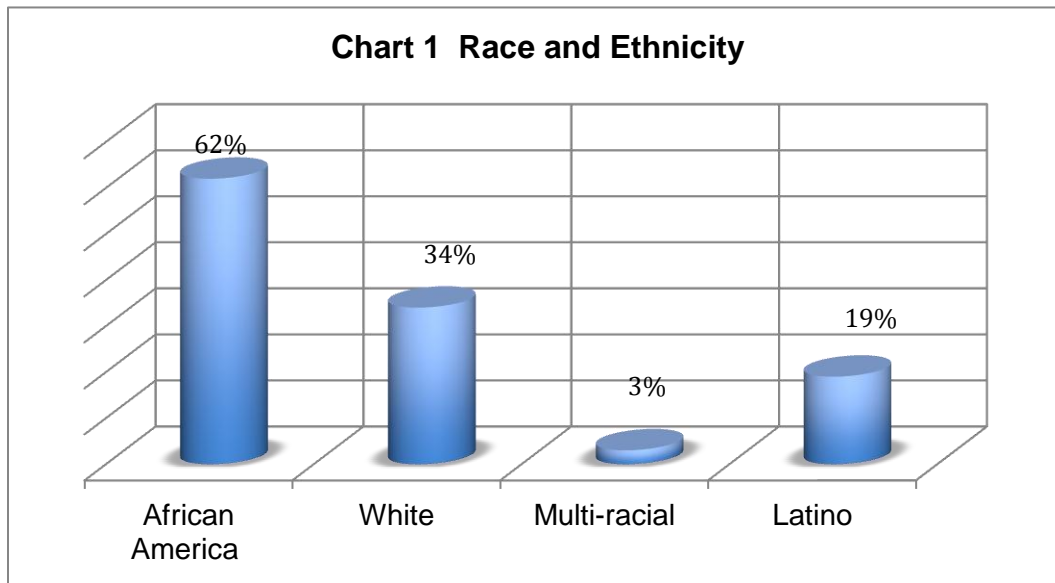
The first of these limitations will not likely be encountered in future evaluations. The second will be addressed in the future by using a standardized time interval for baseline to outcome comparisons.

This was not possible for the current assessment because the number of cases available would have been too small for any meaningful analysis. Intervals have been reported. The third one has also been addressed, since the developers of the Creative Curriculum have revised their assessment instrument and now also include age-based norms.

FINDINGS

✂ *DEMOGRAPHICS*

Assessment data were provided for 97 children of whom 53 were female (54.6%) and 44 were male (45.4). As shown in Chart 1, most of the children were reported to be African American (n=61), followed by White (n=33) and Mixed race (n=3). Nineteen participants were Latino.



On average, the age when children entered the program was 3 years and at were 4 years old the point where they left the program or were given their most recent assessment. Table 1 illustrates the age ranges of HTT children.

Table 1	Age at Program Entry and Exit			
	Entry		Exit	
Age	Percent	Number	Percent	Number
1	8.2	8	0	0
2	20.6	20	1	1
3	43.3	42	34	33
4	21.6	21	35.1	34
5	6.2	6	28.9	28
6	0	0	1	1
Total	100	97	100	97

⌘< TIME SPENT IN HTT PROGRAMS

While over one-third (38%) of the participants spent 6 or fewer months in the program, more than half (51.6%) attended from 1-2 years, as seen in the following table. The average duration for a child in the program was 11.2 months.

By listing the average ages at which children enter and exit the program, Table 2 illustrates that the younger the child enters the program, the longer they will remain in it. Obviously, some of this is enforced by the age limits within the program.

Table 2	Average Number of Month in Program		Average age by Time in Program	
	Percent	Number	Entry Age	Exit Age
1-6 months	38.1	37	3.4 yrs	4 yrs
7-12 months	28.9	28	2.9 yrs	3.9 yrs
13-24 months	23	23	2.7 yrs	4.5 yrs
25-36 months	7	7	1.9 yrs	4.5 yrs
37-48 months	2	2	1 yr	4.5 yrs
Total	100	97		

PERFORMANCE SCORES

The assessment instrument created for the Creative Curriculum used in the HTT education programs evaluates children on 10 developmental factors:

- | | |
|-----------------------|-----------------------|
| 1. Sense of Self | 6. Learning |
| 2. Responsibility | 7. Logical Thinking |
| 3. Prosocial Behavior | 8. Symbolic Processes |
| 4. Gross Motor Skills | 9. Listening |
| 5. Fine Motor Skills | 10. Reading/Writing |

In this Outcomes Report, difference scores were calculated by comparing the baseline and last assessment conducted for each child. The time range between the assessments is shown in Table 3. As can be seen, only 70 cases are included, since for 27 children only baseline data was available.

Table 3	Average Number of Months between baseline and final assessment	
Time Range	Number	Percent
1-6 months	16	22.9%
7-12 months	24	32.3%
13-24 months	22	31.4%
25-36 months	6	8.6%
37-48 months	2	2.9%
TOTAL	70	100%

✂ TOTAL SCORES AND DIFFERENCE SCORES

As notes above, Total Scores were calculated by combining the performance scores for each child at baseline and the last assessment that they received. Analyses included Paired Sample t-tests, multi-factor Anova. When results were shown to be statistically significant, the “p” values were reported. These represent the probability that the differences between the scores shown—in this case the changes in the scores achieved by the children—were just the result of chance. In other words, within the context of the limitations noted above, statistically significant changes in the scores reported below are likely the result of their participation in the HTT programs.

The results, which were found to be statistically significant, follow:

Table 4	Total Scores	
	Baseline Scores	Final Scores
Mean	94.6	192.5
Minimum	14	61
Maximum	263	312
Number	97	90
p=	0.033	

Table 5 illustrates the average exit and baseline scores as well as the average differences between them grouped by gender. No statistically significant differences were found in these scores.

Table 5	Average Baseline Score	Average Exit Score
Gender		
Female	107.8	205.8
Male	78.8	178.4
TOTAL	94.6	192.9

Within the limitations noted above, the impact of the amount of time that children spent in the program and the effect of age were also calculated. In Table 6 the scores achieved by children, categorized by time ranges that they spent in HTT.

There were no statistically significant differences found in this analysis. It cannot be extrapolated from these results that children’s duration in the program is not relevant, however, since the increasing age of children affects the results. In future studies with larger samples, more complete data sets and age-related norms will more effectively be able to assess the impact of amount of time in the program on participants’ scores.

Table 6	Average Baseline Score	Average Exit Score	Number
Time in			
1-6 months	109.6	214	16
7-12 months	85.8	182.9	24
13-24 months	95.2	182.7	22
25-36 months	59	204.2	6
37-48 months	58.5	228.5	2

Statistically significant differences were found when comparing baseline vs exit scores grouped by children’s ages at exit or their most recent assessment, as shown below. Such results would be expected based solely on maturation. The impact of participation in the program will be more discernible in future studies when age-related norms become available for the assessment instrument. Thus, it is important to limit the generalization of these results at this point.

Table 7	Average Baseline Score	Average Exit Score	Number
Age at Exit			
2	39	139	1
3	80.9	146.7	33
4	80.2	179.1	34
5	132.5	246.2	28
6	27	275	1
TOTAL	94.6	192.5	97
	P = .002		

✂ FACTOR SCORES

Noted above were the 10 factors assessed by the curriculum survey. As seen in Table 8, the differences between the baseline and exist scores were found to be statistically significant.

Table 8		Baseline	Exit	P=
Factor				
I.	Sense of Self	11.4	19.6	0.00
II.	Responsibility	11.38	21.13	0.00
III.	Prosocial Behavior	9.3	17.6	0.00
IV.	Gross Motor	16.7	25.8	0.00
V.	Fine Motor	7.34	13.8	0.00
VI.	Learning	6.17	17.3	0.00
VII.	Logical Thinking	7.7	21.9	0.00
VIII.	Symbolic Processes	6.1	13.1	0.00
IX.	Listening	13.7	25.1	0.00
X.	Reading/Writing	7.0	18.0	0.00
TOTAL SCORE		96.8	192.9	0.00

✂ IMPACT OF ANCILLARY THERAPIES

HTT programs include Art Therapy, Play Therapy and Speech Therapy. Referrals to these programs are initiated by case managers or teachers based on observed client need. In Tables 9 and 10, the pattern of referrals is displayed. The most common referral was for Art Therapy, followed by Play Therapy. While, it is possible that the ratio of referrals would differ somewhat were the files lost to the flood available, case managers have confirmed the general pattern that the current data show.

Table 9	Art Therapy	Play Therapy	Speech Therapy
Number referred	61	48	4
Percent referred	63%	49%	4%
Average number of sessions	6	4	1
Maximum number of sessions/child	36	36	42

The following Table further illustrates the patterns of referrals. The most frequent combination of modalities was Art and Play Therapy, with almost three-fourths of children who received ancillary therapy participating in both.

Table 10		
<i>Ancillary Referral Pattern Per Child</i>	Percent	Number
One Modality	21	13
Art and Play	73	45
Art and Speech	3	2
Play and Speech	0	0
All three	3	2
Total	100	62

Table 11	Total Difference		Exit Score		Baseline Score	
Therapy	Yes	No	Yes	No	Yes	No
Art	114.2	60.7	196.4	186.4	70.1	121.1
Play	106.7	84.9	194.5	191.2	82.5	106.5
Speech	119.3	95.1	143.7	195.2	29	97.4
Total	96.2		192.1		94.6	

For the 68 children for whom differences scores were available, statistically significant differences were found between those children who participated in ancillary therapies and those who did not, as Table 12 illustrates.

Table 12	Ancillary Therapy	No Ancillary Therapy
Difference Scores		
Mean Differences	109.9	68
$p =$	0.028	
Number	45	23

In Table 13, the type of ancillary therapy delineates these differences. For each of modalities, gains of more than 100 points on the assessment were noted.

When reviewing the comparative performance scores on each of the 10 factors assessed by the Curriculum assessment, 5 were shown to be significantly different between children who did and did not receive ancillary therapies.

A “dose effect” calculation, which would determine if there were a minimum number of sessions required to see a difference in performance scores will be conducted in future evaluations when a larger, more complete data set will be available.

Table 13		Ancillary	No Ancillary	p =
Factors				
I.	Sense of Self	9.7	5.2	
II.	Responsibility	10.9	7.5	
III.	Prosocial Behavior	9.9*	4.9	0.02
IV.	Gross Motor	10.6*	6	0.021
V.	Fine Motor	7.9*	3.4	0.001
VI.	Learning	12.2	9.1	
VII.	Logical Thinking	15.2	12.1	
VIII.	Symbolic Processes	7.4	5.8	
IX.	Listening	14.1*	7.7	0.018
X.	Reading/Writing	12.7*	7.39	0.043

Art Therapy

A review of Art therapy and the impact on outcomes scores indicated statistically significant differences in all 10 factors between baseline and exit scores for children who participated in this modality, as seen in Table 14. Of particular note, were gains in Learning, Logic, Listening and Reading/Writing.

Table 14		Baseline	Exit*	N = 61 p =
Art Therapy				
I.	Sense of Self	9.6	20.1	0.00
II.	Responsibility	9.3	20.6	0.00
III.	Prosocial Behavior	7.2	17.5	0.00
IV.	Gross Motor	14.6	25.5	0.00
V.	Fine Motor	6.2	14.3	0.00
VI.	Learning	5.6	18.1	0.00
VII.	Logical Thinking	6.2	22.1	0.00
VIII.	Symbolic Processes	5.5	13.2	0.00
IX.	Listening	10.9.	25.6	0.00
X.	Reading/Writing	6.9	19.9	0.00
TOTAL SCORE		82.2	106.5	0.00

Play Therapy

Children receiving Play Therapy achieved similar gains. Again, all statistically significant differences were found in all 10 parameters. Given that most of the children who were enrolled in Art were also enrolled in Play, future studies will attempt to tease out the specific impact of the two therapies individually and in combination.

Table 15		Baseline	Exit*	N = 48 <i>p</i> =
Play				
I.	Sense of Self	9.5	19.8	0.00
II.	Responsibility	9.6	19.8	0.00
III.	Prosocial Behavior	7.2	17	0.00
IV.	Gross Motor	15.2	25.4	0.00
V.	Fine Motor	6.6	13.7	0.00
VI.	Learning	6.2	18	0.00
VII.	Logical Thinking	7.3	22.5	0.00
VIII.	Symbolic Processes	5.8	13.1	0.00
IX.	Listening	11.8	25.5	0.00
X.	Reading/Writing	7.8	20.2	0.00
TOTAL SCORE		87.8	194.5	0.00

Speech Therapy

Speech Therapy is associated with statistically significant differences in Prosocial Behavior, Gross Motor Skills, Fine Motor Skills, Learning, Symbolic Process and Listening. The sample size was very small for this group and thus may not represent the actual effect of this therapy.

Table 15		Baseline	Exit*	N = 4 p =
Speech				
I.	Sense of Self	3.5	8.3	
II.	Responsibility	4.3	21.3	
III.	Prosocial Behavior	3.8	16.8*	.045
IV.	Gross Motor	5.8	25.5*	.011
V.	Fine Motor	2.8	14*	.026
VI.	Learning	0.75	16.5*	.036
VII.	Logical Thinking	0.25	12.3	
VIII.	Symbolic Processes	2.3	12.3*	.044
IX.	Listening	4.3	20.1*	.026
X.	Reading/Writing	1.2	15	
TOTAL SCORE		24.3	143.7	

School-provided Scores

Finally, for 19 children, data were provided about their performance on a Stanford Reading and Math tests that were administered in their schools. While this is a very limited sample, the findings are noteworthy. Findings illustrated in Table 17, nearly three-quarters of the group scored average or above average in both tests. Future evaluations will attempt to secure this data on all children who attend school beyond the HTT programs.

Table 16	Stanford Reading		Stanford Math	
	Percent	Number	Percent	Number
Relative Rank				
Below Average	26%	5	26%	5
Average	37%	7	42%	8
Above Average	37%	7	32%	6
Total	100	19	100	19

CONCLUSIONS

The initial findings presented in this report suggest that the HTT programs benefit children in their achievement of developmental markers as measured by the Creative Curriculum assessment. Children who also participate in the ancillary modalities of Art, Play and Speech therapies show gains above those who do not participate in these programs.

Limitations confronted in this study mostly came about from a flood-related loss of student records, but also from the lack of age-related norms in the Curriculum assessment instrument. Both of these issues have been addressed. Thus, future evaluations will include an adequate samples size and a normed survey instrument from which trends can be tracked, generalizations made and the true outcomes and effectiveness of the programs determined.