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Abstract

The effect of space and furnishings, as measured by the Early Childhood Environment Rating Scale – Revised (ECERS-R), on the School Readiness Composite (SRC) of the Bracken Basic Concept Scale – Revised (BBCS-R) was investigated. The data analyzed was collected as part of the West Virginia Educare Initiative and included the SRC from 65 preschool students, ranging in age from 2 years, 6 months to 5 years, 0 months. The first subtest score on the ECERS-R, space and furnishings, was also calculated for each child's classroom. The Spearman rank correlation coefficient between the SRC on the BBCS-R and the space and furnishings score on the ECERS-R was .26 at the .05 level of significance. Due to the low level of the correlation coefficient and lack of research in this area, duplicate studies are needed.

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The Effect of Space and Furnishings on Academic Readiness Scores of West Virginia Preschoolers

In West Virginia, and throughout the United States, child care was a necessity for many working parents. Finding a high quality program was often a challenge for the concerned parent. In response to the increased need for high quality child care, research was required to identify which factors among high quality preschool programs make those programs effective.

The effect of space and furnishings, as measured by the Early Childhood Environment Rating Scale – Revised (ECERS-R), on the School Readiness Composite (SRC) of the Bracken Basic Concept Scale – Revised (BBCS-R) was investigated. Data gathered from the West Virginia Educare Initiative showed a higher quality environment was significantly correlated to a higher SRC score.

Prior to examining the data, a review of the importance of preschool, the effect of preschool on children in low income families, the effect of space and furnishing on the quality of preschools, and the definition of academic readiness was discussed. The status of preschools in West Virginia and the West Virginia Educare Initiative was also discussed.

The Importance of Preschool

In our society parents were often the first teachers in their child's life. However, recent changes in the work force of the United States resulted in parents entrusting this role to child care providers such as day care centers and preschool programs. As these changes continued to develop and more parents went into the workforce, quality care for children was a scarce commodity (Lindsey, 1998). In fact, the search for quality child care was a concern for the parents of 7.7 million children under the age of 5 nationwide (National Association of School Psychologists {NASP}, 1998).

The quality of day care programs affected many aspects of a child's development. These included the biological, intellectual, physical, and social skills that began to develop in the early years of life. Overall, the data clearly showed that the quality of a child's early care and education was highly correlated with improvement in early language development, cognitive growth, and social competence (Bryant, Burchinal, Lau, & Sparling, 1994; Burchinal, Roberts, Nabors, & Bryant, 1996; Frede, 1995; Howes, Phillips & Whitebrook, 1993; Phillips, McCartney, & Scarr, 1987).

Academic and intellectual gains were important to individual children and society. Moreover, the advantage of a quality preschool program benefited not only the individual child and society, but also the entire family by creating an environment that allowed a child to develop cognitive, language, and behavioral competencies (Vandell & Wolfe, 2000). According to the National Association of School Psychologist (1998), the benefits of preschool programs included a reduction in cost of educational needs of the child, a reduction in social service needs later in life, and an increase in the self-sufficiency of the family. There was also a reduction in crime rates, higher productivity in the workforce, and a greater tax base provided by these students when they entered the workforce (Vandell & Wolfe, 2000).

Biological Aspects of Brain Development

The most recent research regarding the development of a child's brain focused attention on circuitry, physical development, and the effects of the environment on early brain development. In describing the developing circuitry in the brain, the American Medical Association (AMA) (1999) referred to the increased production of synapses in the brain as proliferation. After the period of synaptic proliferation, the brain underwent a time period of pruning to eliminate unused synapses (AMA, 1999). The AMA (1999) stated that both of these processes occurred in various areas of the brain at differing

times and at different rates. For example, the visual cortex underwent rapid growth at the age of 2 months, peaked at 8 to 10 months, then gradually decreased until the age of 10 years. Proliferation in the frontal cortex began later than 2 months. Pruning is not completed in the frontal cortex until adolescence.

Environmental Aspects of Brain Development

The scientific community once believed nature was the sole determinant of the number of available brain cells and was virtually unchangeable (Lindsey, 1998). However, recent research illustrated the essential role the environment plays on the development of brain connections or synapses (Carnegie Corporation, 1994). Walsh (1981) noted data collected over the last 20 years demonstrated the brain's plasticity in response to a nurturing environment. The differences in the brains of animals who have been exposed to rich environments included an increase in cerebral weight, length, and depth (Walsh, 1981). The greatest effects were in the occipital cortex where there was an increase in dendritic branching, dendritic spines and a change in synaptic numbers.

Several researchers have documented the effects of environmental variability on brain development in rats. Diamond, Lindner, Johnson, Bennett, and Rosenzweig (1975) found rats raised in an enriched environment had a 7% cortical depth difference as compared to those raised in an impoverished environment. Expanding on this research, Diamond, Ingham, Johnson, Bennett, and Rosenzweig (1976) found similar results. Rats exposed to an enriched or an impoverished environment for 15 days, 7 days, or 4 days, showed cortical depth differences. No difference was found in the dorsal-medial segment of the occipital lobe after one day of differing environmental conditions.

Preschool and Poverty

Children living in poverty were less likely to attend a preschool program compared to those

children living at or above the poverty level (US Dept. of Education, 1999). Information on poverty from 1995 indicated that 21% of children in the United States live in households below the poverty level (NASP, 1998). Participation in high quality preschool programs was believed to help the financial and social functioning of low-income families (NASP, 1998).

Specifically, research from the Chicago Child-Parent Centers involving 1,539 African American (93%) and Hispanic (7%) children from low-income families showed the effect preschool has on the development of low income children (Vandell & Wolfe, 2000). Children who attended a preschool program numbered 989. Non-participants numbered 550. Math and reading achievement tests were administered to all participants at the ages of 5, 8, 14, and 20 years. The study found those who attended the preschool program had higher math and reading test scores, were more likely to complete high school, and had a lower rate of juvenile crime (Reynolds, Temple, Robertson, & Mann, 2000).

Two of the most well known studies that illustrated the effect preschools can have on children who live in poverty are the Abecedarian Project and the High Scope Perry Preschool Project. Both of these studies concluded that money spent on early education programs saved financial resources in the future and provided a better chance for academic success for the children involved (Vandell & Wolfe, 2000).

The Abecedarian study provided high quality early childhood education to children in low-income families (Kendall, 1995). Campbell and Pungello (2000) concluded, in their follow up study, children who participated in the preschool program, which included pediatric care and educational support for five years, scored higher than the control group on cognitive test scores at the age of 21. They also scored higher on mathematics scores, were more likely to currently be attending school, and were more likely to have attended a 4-year college.

The High Scope Perry Preschool Program provided high quality preschool services to 58 African American children who were considered to be at risk (Zigler & Styfco, 1994). Kendall (1995) indicated for each dollar invested in this high quality program, $7.61 was saved on future costs for services. In a long-term follow-up of this study, a cost benefit analysis was conducted when the program participants reached 27 years of age (Barnett, 1996). A savings of $88,433 per participant was ascribed to savings in schooling costs, welfare costs, justice system costs, a decrease in crime rate, and an increase in taxes based on income earnings of participants.

Head Start

Head Start programs began in 1965 in order to provide comprehensive developmental services to low income children, ages 3 years to 5 years (U.S. Department of Health and Human Services, 2001). In 1997, Head Start expanded its services to deliver full-day and full-year services to children (United States Department of Health and Human Services, 2001). In 2001, it was estimated that this program served approximately 916,000 children. The accessibility and duration of the program provided important data concerning early child care and the learning environment.

In an attempt to measure quality and outcomes of Head Start participants across the United States, a database was created in 1997 by the Head Start Quality Research Centers (U.S. Department of Health and Human Services, 2001). This database included information on 3,200 children in 40 Head Start programs across the United States. The following assessment tools were used to gather information for the database: Early Childhood Environment Rating Scale, Arnett Scale of Caregiver Behavior, Peadbody Picture Vocabulary Test- Third Edition, various scales from the Woodcock Johnson Psycho-Educational Battery-Revised, a social skill scale, and the Child Observation Rating (Administration for Children, Youth,

and Families, 2000).

Preliminary results from the database analysis indicated that classroom quality in these programs is good (U. S. Department of Health and Human Services, 2001). Strengths of the programs included classroom schedule, atmosphere, provision for parents, and provision for children with special needs (Administration for Children, Youth, Families, 2000). In addition, these children were entering kindergarten ready to learn, with skills such as early literacy, numeracy, and social skills that they acquired in Head Start (United States Department of Health and Human Services, 2001).

Specifically, data from the Spring of 1997, Fall of 1997, and the Spring of 1998 showed classrooms in Head Start programs were of higher quality than most center-based programs (Administration for Children, Youth, and Families, 2000). Children in the program had significant growth in vocabulary, improved in social skills and relationships, and increased in school readiness skills.

Early Head Start

In 1995, the benefits shown in the Head Start programs prompted the start of a new program to serve low-income families with children under the age of 3 years, as well as pregnant women. The program, called Early Head Start, served approximately 55,000 infant and toddlers in 2001 (U.S. Department of Health and Human Services, 2001). A preliminary evaluation of the Early Head Start program was conducted in January 2001. The study evaluated data from 3,000 children in 17 sites during the first two years of the child's life (United States Department of Health and Human Services, 2001).

Results indicated that children enrolled in these programs performed significantly better in cognitive, language and social-emotional developments than their non-participating counterparts (U.S. Department of Health and Human Services, 2001). The report also found 2-year-old toddlers in the program scored

higher on standardized tests measuring infant and toddler development. These children were found to have larger vocabularies and the ability to speak in more complex sentences. Children who participated in this program were approximately 10% less likely to be at risk of slower developmental learning than non-participants.

Space and Furnishings in the Preschool Environment

The factors that differentiate a high quality preschool program from programs considered low to mediocre in quality were numerous. A high quality program contained a safe and stimulating environment for the child (Lindsey, 1998). This environment, including indoor space, outdoor space, furniture, and room arrangement, was an integral part of a high quality program.

The National Association for the Education of Young Children (NAEYC) recommended a minimum of 35 square feet of useable indoor play space per child (Jones, 1999). The inside area included an arrangement of different areas for different types of play (Jones, 1999). This arrangement smoothed transitions from one activity to another (Sainato, 1990). Each area should be equipped with an adequate amount of material for the number of children present (Jones, 1999). The indoor facilities included furniture appropriate to the age and size of preschoolers. Ideally, NAEYC stated that each classroom should be equipped with low sinks and small toilets (Jones, 1999).

Research on classroom environment has been somewhat limited to the effect the environment has on social relations. Nordquist (1991) increased positive social interactions between autistic children and their teachers by reorganizing their materials and equipment used for play, changing the room arrangements, and changing the schedule of instruction and play time. Instructors increased smiling and affectionate words when in the free play area. The children showed an increase in compliance with instructions and an

increase in the use of play materials.

Outdoor play areas had a minimum of 75 square feet of play space per child according to the NAEYC (Jones, 1999). Injuries in the preschool setting were most likely to occur on playground equipment (Briss, Sacks, Addis, Kresnow, and O'Neil, 1994). Vandell and Wolfe (2000) indicated that the causes of most injuries were due to the height of the playground equipment and a lack of impact absorbing material placed under the equipment. Preschools of high quality maintained safe playground equipment specially designed for preschool children age 2 to 5 years (Jones, 1999).

Academic Readiness

For the purposes of this study, the definition of academic readiness discussed by Bracken (1998) will be used. Bracken used six subtests, titled the School Readiness Composite, of the BBCS-R to measure academic readiness. The six subtests included identification of colors, letters, numbers, sizes, comparisons, and shapes. Specifically, Bracken (1998, p. 1) developed the SRC to be "used to assess children's knowledge of those 'readiness' concepts that parents and preschool and kindergarten teachers traditionally teach children in preparation for formal education." These concepts were strongly related to a child's overall intellectual development (Howell & Bracken, 1992; Laughlin, 1995; McIntosh, Wayland, Gridely, & Barnes, 1995). Bracken (1998) also noted that basic concepts include high levels of societal agreement in addition to cognitive development.

Preschool in West Virginia

Child care programs in West Virginia had increased in numbers during the past few years (West Virginia Kids Count, 1999). The state, which included a large number of rural areas, had only one county without a licensed child care center (West Virginia Kids Count, 1999). Information from West Virginia's

Kids Count Data Book (1999) identified 118,000 children under the age of 13 who had working parents. In addition, 51,920 of these children lived in low- income families with working parents.

Although the number of children in poverty decreased slightly from 31% in 1985 to 25% in 1996, the number of single parent families increased from 16% in 1985 to 25% in 1996 (West Virginia Kids Count, 1999). Based on these numbers, the need for child care for single parents and working parents was high in West Virginia. A high quality program, which may offset the risk factors associated with poverty, ensured these children begin their academic career ready to learn.

Despite improvements in child care over the past years, day care service providers were not required to have any training to be licensed and certified in the state of West Virginia (West Virginia Kids Count, 1999). The child to teacher ratio was also higher than what is considered appropriate for a high quality program (West Virginia Kids count, 1999). In West Virginia, the caregiver to infant ratio was 1 to 4 and the caregiver to toddler ratio was 1 to 10. High quality standards suggested 1 caregiver for 3 infants and 1 caregiver for 7 toddlers.

Educare Initiative

In response to the need for expansion of services and increase in the quality of these services, the West Virginia Educare initiative was implemented. Specifically, the program provided funding and resources while establishing standards for child care centers. There were 41 pilot Educare sites located in 6 community collaboratives (West Virginia Prevention Resource Center [WVPRC], 2001). Together, these sites impacted 1800 children from birth to kindergarten. In order to determine the effectiveness of

the Educare initiative, various aspects of the Educare sites, such as use of space, health and safety practices, and staff training was measured and evaluated. Information obtained in this study showed a positive correlation between the space and furnishings of a preschool center and the academic readiness of the preschool children.

Methods

Subjects

Subjects included a random sample of approximately 10% of children enrolled in an Educare program. The children ranged in age from 2 ½ to 5 years. No exclusions were made based on a child's developmental level. The children in the sample ranged from gifted to developmentally disabled in their abilities. For purposes of this research, the sample included thirty-eight male and twenty-seven female preschool children. The age range was from 2 years, 6 months, 24 days, through 5 years, 8 months, 17 days. The children in this study represented a total of 19 preschools in West Virginia.

The Educare program included a total of 41 sites located in 6 community collaborative programs. These community collaboratives were located in the following areas of West Virginia: Cabell/Wayne County, Monongalia County, Roane County, Upsher County, Webster County, and Summers County.

Instruments

Assessments in the overall larger study included the Peabody Picture Vocabulary Test Third Edition (PPVT-III), the Bracken Basic Concept Scale – Revised (Bracken-R), and the Carolina Curriculum for Preschoolers with Special Needs (CCPSN). Each classroom within each preschool was assessed with the Early Childhood Environment Rating Scale - Revised Edition (ECERS-R) and/or the

Infant/Toddler Environment Rating Scale (ITERS) as appropriate. The data from the SRC of the BBCS-R and the first subscale score on the ECERS-R were utilized for the purposes of this study.

Bracken-Revised.

The Revised Version of the BBCS can be used with children age 2 years 6 months through 7 years 11 months. This norm-based test was used to assess a child's grasp of basic concepts through the administration of 11 subtests. These subtests included the following: Colors, Letter, Number/Counting, Sizes, Comparisons, Shapes, Direction/Position, Self/Social Awareness, Texture/Material, Quantity, and Time/Sequence.

Each child was administered the test individually. During test administration, the child was presented with 4 pictures and asked to identify which picture corresponded with the word pronounced by the examiner. The SRC is composed of the first six subtests of the BBCS-R. The subtests included concepts that children are expected to know prior to beginning their formal education.

The standardization sample for the BBCS-R consisted of 1100 children between the ages of 2 years 6 months 0 days and 7 years 11 months 30 days (Bracken, 1998). The children were representative of the population in the United States and were stratified by age, gender, race/ethnicity, region, and parent education level. In addition, all children were able to understand and speak English. No modifications were made for children who were unable to speak English. The receipt of special education or gifted services was not a basis for exclusion in the sample.

To assess reliability of the instrument, split-half reliability coefficients were calculated using the Spearman-Brown correction (Bracken, 1998). The coefficients ranged from .78 to .98 for the subtests and .96 and .99 for the total test. The standard error of measurement (SEM) for the subtests on

BBCS-R ranged from .4 to 1.4. The SEM on the total test ranged from 1.6 to 2.8. The reliability of the BBCS-R was also assessed with a test-retest of 114 children who took the test on two different occasions. The average correlation for the total test across age levels was .98. The average test-retest reliability of the school readiness composite across age levels was .91.

In evaluating concurrent validity, the BBCS and the BBCS-R were administered to 54 children divided in two groups. One group took half of the Bracken first and then took half of the BBCS-R. The other groups completed their test in the opposite manner. The results show that the mean of the BBCS scores were not significantly different from the BBCS-R scores (Bracken, 1998).

Panter (1999) used the BBCS-R as part of a battery to predict the academic performance of 71 kindergarten children. The geometric design of the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R) and the Parent Form of the Social Skills Rating System were included in the battery of tests. The study concluded that the SRC of the BBCS-R predicted retention of children with 82% to 94% accuracy. In addition, the SRC significantly predicted the teachers' rating of the student's readiness for first grade, SSRS teacher ratings, and Metropolitan Readiness Test - 6 scores (MRT-6).

The correlation between the BBCS-R and the SRC to other measures of language development, intelligence, and cognitive ability indicated the strength of measurement of the BBCS-R. A strong correlation between the BBCS-R and the PPVT-III and the Preschool Language Scale indicated the BBCS-R is measuring receptive vocabulary (Bracken, 1998). Strong correlations between the BBCS-R and the Boehm-R, and Boehm-Preschool indicated the BBCS-R is measuring basic language concepts (Bracken, 1998). The strong correlation between the BBCS-R and the WPPSI-R indicated that the BBCS-R is a good measurement of intelligence (Bracken, 1998). The BBCS-R also showed a strong

correlation with the Differential Ability Scale (DAS), which measured cognitive abilities (Bracken, 1998).

In a study by Howell and Bracken (1992), 80 African American preschool children age 4 years, 2 months through 5 years, 4 months were administered the BBCS and the Stanford-Binet Intelligence Scale – Fourth Edition. The BBCS correlated .91 with the composite score of the Stanford-Binet Intelligence Scale – Fourth Edition. The subtests of the BBCS consistently loaded higher on the g factor of intelligence.

Bracken & Howell (1991) conducted a study comparing the BBCS and the Kaufman Assessment Battery for Children (K-ABC) on a group of sixty preschool children. The children ranged in age from 3 years, 0 months through 5 years, 10 months. The test-retest reliability coefficient was .90 for the BBCS. The corrected correlation between the two measures was calculated at the moderate level of .57. Bracken & Howell (1991) maintained that the variance is due to the more nonverbal nature of the K-ABC versus the more verbal nature of the BBCS.

Zucker and Riordan (1988) evaluated concurrent validity among the BBCS, the Boehm Test of Basic Concepts – Preschool Version or Boehm-Revised, and the Peabody Picture Vocabulary Test-Revised. The study administered the above tests to 99 preschool children during a kindergarten screening. The BBCS was found to be correlated significantly with the Peabody Picture Vocabulary Test –Revised. In addition, the BBCS correlated comparably with the Boehm Test of Basic Concepts-Preschool Version and the Boehm revised.

Laughlin (1995) examined concurrent validity between the SRC of the BBCS and the WPPSI-R. The scales were administered to 83 children ranging in age from 4 years, 7 months through 4 years, 10 months.

Results revealed a .77 correlation between the SRC and the WPPSI-R Full Scale IQ. The SRC also loaded high on the g factor.

Early Childhood Environmental Rating Scale – Revised.

The ECERS-R is an update of the original ECERS published in 1980. The revised edition retained the same goal of assessing programs for children 2 ½ through 5 years of age. However, the revised edition was designed to include culturally diverse populations and inclusive programs. Measurements were obtained on 43 items contained in 7 subscales. These subscales included space and furnishings, personal care routines, language reasoning, activities, interaction, program structure, and parents and staff. This criterion-based instrument utilized a 7-point scale to score the programs on the 43 items. The point scale was distributed as follows: 1 for adequate, 3 for minimal, 5 for good, and 7 for excellent (Harms, Clifford, & Cryer, 1998).

The revised edition maintained the same basic scoring and administration as the original ECERS. Therefore, the ECERS-R also had good predictive validity (Harms, Clifford, and Cryer, 1998). In order to establish interrater reliability, a sample of 21 classrooms was evaluated using the ECERS-R (Harms, Clifford, and Cryer, 1998). Correlation between both observers on the complete scale was .92. The range of internal consistencies on subscales ranged from .71 to .88. The internal consistency on the space and furnishing subscale was rated as .76.

Procedures

The PPVT-III and the Bracken-R was individually administered to children selected from the Educare program. Each of the children selected for assessment had their classroom evaluated using the ECERS-R. Supervised graduate school students completed the assessment practices in accordance with the Educare

Study Protocol. Using the data gathered, the correlation between the space and furnishings score of the ECERS-R and the school readiness composite of the Bracken-R was calculated. Data analysis was completed using the SPSS 10.0 statistical software system.

Results

Examination of a scatterplot (see Figure 1) showed the data was not normally distributed (see Figure 1). Therefore, a Spearman rank correlation was used in calculating the correlation coefficient. The Spearman rank correlation coefficient, which measured the effect of the space and furnishing score of the ECERS-R on the SRC of the BBCS-R, was .26 at the .05 level of significance.

Refer to Table 1 for descriptive statistics on the SRC scores of the BBCS-R and the space and furnishing scores of the ECERS-R. Frequency tables for the SRC scores of the BBCS-R and the space and furnishing scores of the ECERS-R are shown in Table 2 and Table 3, respectively.

Discussion

The result of the data analysis supported the hypothesis. The positive correlation confirmed as the space and furnishings scores on the ECERS-R increased the scores on the SRC of the BBCS-R increased as well. This result indicated a preschool child's environment affected his or her performance on the academic readiness task. Further studies specific to the area of preschool space and furnishings and their effect on academic readiness skills are needed to corroborate or disprove the hypothesis.

Several limitations of this study should be considered when evaluating the results. The number of subjects in this experiment was 65. A larger group of children may have resulted in a more profound effect. In addition, the children used in the data set were all from West Virginia. A group

representing various parts of the nation would be more appropriate and may produce different results. The population used in this study also had a high drop out rate. Therefore, many of the original subjects selected for testing had to be replaced. This may have resulted in a data set that consisted of higher functioning children.

In evaluating the data, the majority of space and furnishing scores from the ECERS-R and the SRC from the BBCS-R were distributed on the higher end of both scales. The highest possible score on the space and furnishings subscale was 56. The data from the locations in this study had a mean of 44.26. In addition, the highest standard score on the SRC of the BBCS-R was 150. The preschool children in the data set had a mean score of 103.82.

One possible explanation for the high scores on both data points was the process used to select programs for the West Virginia Educare Initiative. The selection process consisted of each program joining with community resources and submitting a grant proposal. This selection process required time, energy, and coordination among the preschool and the community organizations. The selection process encouraged high quality programs to participate and unintentionally discouraged programs of poor quality from applying for consideration. Consequently, the scores obtained in the study were from locations high in quality and from children exposed to high quality day care.

Other issues, which have affected the outcome of this study, include the length of time a child attended each program. Some children have attended a preschool program beginning at 6 weeks, while others have not started a preschool program until age 2 or 3. Controlling for this difference in experience among the children would be key in conducting additional research. Similar to this issue is the enrollment status of the children in each program. Children enrolled in preschool on a full time basis are exposed to the preschool

environment on a daily basis and therefore receive the benefits of a high quality program more fully than those children attending part time.

It is recommended that a follow-up study be conducted in six months to one year to document the change in program quality as a result of the West Virginia Educare Initiative. In addition, academic readiness skills should also be re-evaluated at this time to determine the effect of the program's improvement in space and furnishings on academic readiness skills.

Although the result of this study was positive and significant, the correlation coefficient was relatively weak and explained only about 7% of the variance. Due to the low correlation coefficient and lack of past studies in this area, it is uncertain whether space and furnishings should continue to be an area of focus for educational specialists. Future research should consider at what point the space and furnishing in a preschool fail to have a substantial impact on a child's acquirement of academic readiness skills. After evaluating the magnitude of this effect, a determination could be made whether or not additional time, energy, and money should be used to improve environmental aspects of preschoolers' surroundings.

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Table 1

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
SRC Standard Score	65	74	60	134	103.82	14.59
ECERS Subscale 1 Score	65	31	25	56	44.26	9.52

Table 2

Frequency of SRC Standard Score

SRC Score	Frequency	Percent	Valid Percent	Cumulative Percent
60	1	1.5	1.5	1.5
73	1	1.5	1.5	3.1
81	1	1.5	1.5	4.6
82	2	3.1	3.1	7.7
85	1	1.5	1.5	9.2
86	1	1.5	1.5	10.8
88	1	1.5	1.5	12.3
89	1	1.5	1.5	13.8
90	3	4.6	4.6	18.5
91	3	4.6	4.6	23.1
92	1	1.5	1.5	24.6
93	2	3.1	3.1	27.7
94	1	1.5	1.5	29.2
96	1	1.5	1.5	30.8
98	1	1.5	1.5	32.3
99	3	4.6	4.6	36.9
100	2	3.1	3.1	40.0
102	3	4.6	4.6	44.6
103	3	4.6	4.6	49.2

105	3	4.6	4.6	53.8
106	3	4.6	4.6	58.5
107	1	1.5	1.5	60.0
108	2	3.1	3.1	63.1
109	1	1.5	1.5	64.6
111	2	3.1	3.1	67.7
112	3	4.6	4.6	72.3
113	2	3.1	3.1	75.4
114	1	1.5	1.5	76.9
116	3	4.6	4.6	81.5
117	1	1.5	1.5	83.1
118	1	1.5	1.5	84.6
119	1	1.5	1.5	86.2
120	1	1.5	1.5	87.7
121	1	1.5	1.5	89.2
123	1	1.5	1.5	90.8
125	1	1.5	1.5	92.3
126	1	1.5	1.5	93.8
129	3	4.6	4.6	98.5
134	1	1.5	1.5	100.0
Total	65	100.0	100.0	

Table 3

ECERS Subscale 1 – Space and Furnishings

Score	Frequency	Percent	Valid Percent	Cumulative Percent
25	5	7.7	7.7	7.7
28	2	3.1	3.1	10.8
33	4	6.2	6.2	16.9
34	1	1.5	1.5	18.5
36	6	9.2	9.2	27.7
39	5	7.7	7.7	35.4
40	1	1.5	1.5	36.9
41	1	1.5	1.5	38.5
44	1	1.5	1.5	40.0
45	2	3.1	3.1	43.1
46	4	6.2	6.2	49.2
47	1	1.5	1.5	50.8
49	5	7.7	7.7	58.5
50	1	1.5	1.5	60.0
51	6	9.2	9.2	69.2
52	6	9.2	9.2	78.5
53	7	10.8	10.8	89.2
55	3	4.6	4.6	93.8

56	4	6.2	6.2	100.0
Total	65	100.0	100.0	

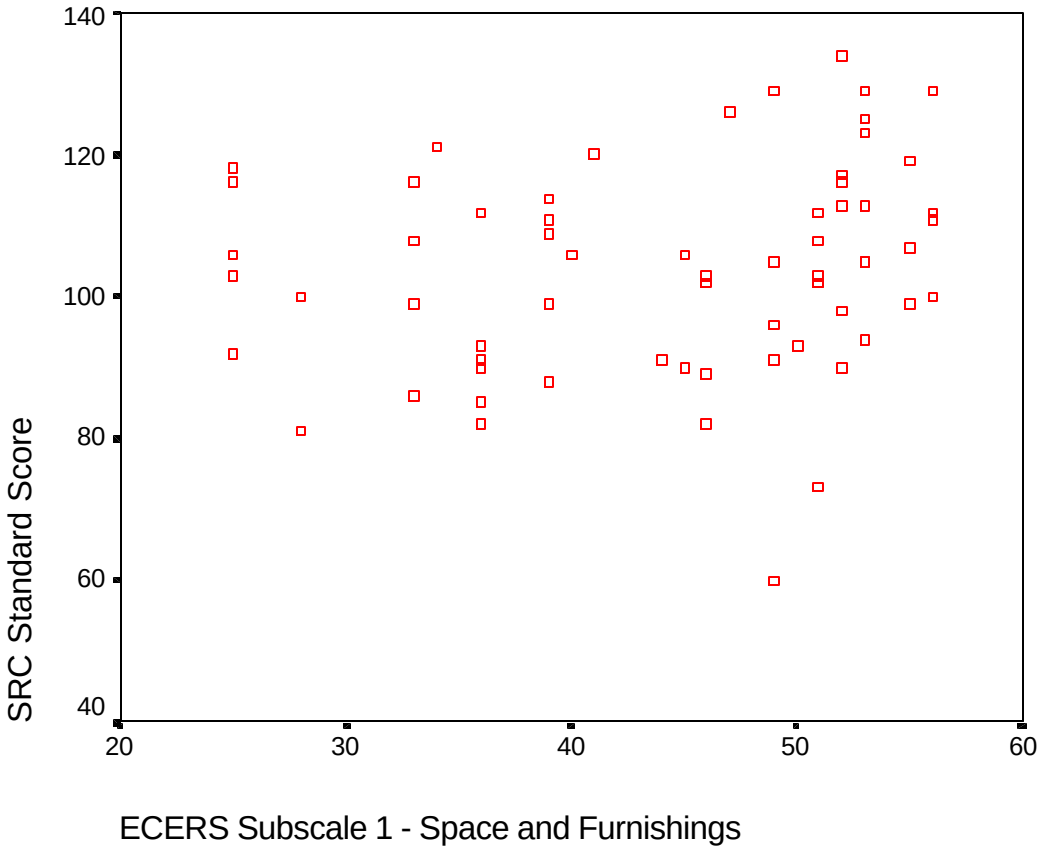

Figure 1 Scatter Plot of SRC Standard Score ECERS Subscale 1