

NEW DOMINION SCHOOL
GIRLS' PROGRAM:
FIRST STUDY OF
PROGRAM EFFECTIVENESS
(1996 – 2002)

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INTRODUCTION

New Dominion School has provided experiential and educational services for female adolescents with emotional problems, learning disabilities, and behavioral disorders since its opening of the Girls' Program in 1996. New Dominion School (NDS) has successfully provided effective interventions for male adolescents for 28 years in its Boys' Program. Located in Buckingham County near Dillwyn, Virginia, the program focuses on positive group processes within a wilderness camping framework that emphasizes individual responsibility, daily structure, emotional growth, building of relationships, and problem-solving. NDS is now a subsidiary of Three Springs, Inc., which has its headquarters in Huntsville, Alabama.

Students from ages 11 to 18 live in groups of not more than 12 girls with two group counselors at each campsite on a 550 acre campus. Staff and students are interdependent as they plan their work projects, weekly off-campus recreation, meals at the campsite two days a week, and longer trips which run from three days to four weeks. These longer trips may involve canoeing, hiking, or bicycling. When problems arise, a group meeting is called to resolve differences. A strong academic program focuses on each student's specific needs within the classroom. In addition, students with a history of alcohol or drug problems are placed in a group called Recovery Dynamics, which addresses substance abuse and is run by a trainer certified in Recovery Dynamics. A Sexual Awareness group, run by a Certified Sex Offender Treatment Specialist, is available for students who have a history of sexual activity or of being sexually abused.

NDS is licensed by CORE, a licensing body of the Commonwealth of Virginia. The Girls' Program serves a maximum of 48 students with a staff including eighteen direct care Group Leaders and Supervisors, two Family Workers, four Teachers, and additional support and administrative workers.

PROGRAM EVALUATION

This is the initial study of the effectiveness of the Girls' Program. It includes students who completed the NDS program during the years 1996 through 2002. The NDS Boys' Program has completed five studies of intervention effectiveness, and the results of these studies are available upon request.

Methodology

Demographic information was retrieved from the admission records for the 210 students who were admitted into the Girls' Program at NDS during this six year period of 1996 – 2002. Of the 210 students, sixty-eight girls (32.4%) did not successfully complete the program and were not contacted for further data collection. One hundred and forty-two students successfully completed the NDS program and contact was made to collect subsequent data on 77 girls (36.7%). Another sixty-five students (30.9%) who successfully completed the program could not be reached for follow-up data.

The student's family or responsible agency personnel were contacted through telephone interviews to gather data regarding the activities of the students after discharge from NDS. Follow-up interviews were conducted between 5.45 months and 66.43 months after discharge, with the mean being 27.14 months. In one case, the student answered the follow-up questions herself, as her parent was unavailable. The students were rated on a 3-point scale of adjustment before and after admission in four areas: School, Leisure, Interpersonal, and Household (defined as avoidance of disruption of normal household functioning). Satisfaction with the program at NDS and its intervention effectiveness also were reported by the respondents.

The Problem Evaluation Inventory was introduced in 1982 and contains 19 characteristics or behaviors that are rated by parents or agency personnel. These items are rated on a 5-point scale from "Almost Always" to "Almost Never." A copy of this inventory can be obtained from NDS (Note 1).

The Internalized Shame Scale (ISS) by David Cook (Note 2) was introduced in 1997 to assess changes in self-esteem and internalized negative emotions. The ISS is available from Multi-Health Systems, Inc. (Note 3)

Results for the 77 Students who were successfully contacted for Follow-Up data.

Age of Subjects. The average age of the female students at admission ranged from 11 years 5 months to 17 years 9 months old with a mean of 15 years 8 months.

Length of Stay. The mean Length of stay in the program was 14.5 months, with a range of 9.5 months to 19.3 months.

Referral Sources. Referral Sources were divided as follows:

Table 1. Referral Sources

Source	Number	Percentage (%)
Private out of state	21	27.3
Private in state	7	9.1
School System	5	6.5
Court	14	18.2
DSS	29	37.7
Both private out of state and School	1	1.3

Twenty-eight students (36.4%) were referred from private funding sources while 48 students (62.4%) were referred from public funding sources. One student (1.3%) was jointly referred by both private and public sources.

Pre-NDS Profile. The 77 students on whom follow-up data was collected showed the following pre-admission profile.

Table 2. Pre-Admission Profile

Description	Percentage (%)
Placement in Special Education Classes	37.7
Received Mental Health Services	88.3
Outpatient Therapy only	46.8
Inpatient Therapy only	35.1
Both Outpatient and In-Patient	6.4
Substance Abuse Issues	
Prior alcohol problems	37.7
Prior drug problems	50.6
Court Involvement	
Contact with Juvenile Court	64.9
Contact with Court of Record	13.0
Charged with a Sex Offense	0

Family Background. The incidence of students coming from single parent households was found to be 45.5%. This compares with the 2000 United States Census report that 28% of children living in households headed by a single parent. In this sample, 10.4% of the student's families had no one employed and 22.1% of the families were on welfare. According to the results of the 2000 United States Census, 5.8% of adults over the age of 16 were unemployed and 9.2% of families (in 1999) were below the poverty line.

The admissions records indicate that the following percentages of students had at least one family member reported as having these problems: Criminal Record – 40.8%; Drinking Problem – 46.1%; Drug Problem – 39.5%; History of Mental Illness – 37.8%.

Pre-Admission Adjustment. During the telephone interview conducted after discharge, this information was obtained regarding adjustment of the student prior to admission to NDS. Poor adjustment was reported on all four variables:

Table 3. Pre-Admission Adjustment

Area of Adjustment	Inadequate	Adequate	Good	Missing data
School	85.5 %	10.5 %	3.9 %	1
Leisure	86.7 %	10.7 %	2.7 %	2
Interpersonal	86.7 %	13.3 %	0	2
Household Disruption	93.3 %	6.7 %	0	2

Summary of Pre-Admission Findings. In this first six year period, the average student admitted to NDS Girls' Program was 15 years 4 months old and she completed the program in 14 ½ months. Poor adjustment was reported for the students at prior school placements, in leisure activities, within the home and in interpersonal skills. She is likely to have participated in some form of psychotherapy (88.3 % of these students have) and may have also struggled in her school as well (37.7 % of these students have been found eligible for special education services). She has a 50 % chance of having problems with drugs and may have also abused alcohol (as 37.7 % of this population were described as doing.)

The average student in the Girls' Program at NDS came from a family experiencing significant difficulty as well. She has a 45.5% chance of coming from a family with a single parent, with an almost equal chance of having family members with a drinking problem. One out of five of our students came from a family receiving welfare, but only one in ten of our students came from a family with no member gainfully employed. The NDS student may have a family member with a criminal record (40.8 %) and may also have experience with parents or siblings with a mental disorder (37.8 %).

Approximately one-third of our students are referred from private situations, while the schools, court system and Department of Social Services account for the rest of the placements at NDS Girls' Program.

Post-NDS Admission Information

Age at Discharge. The average age of our student at the time of their send-off was 16 years 7 months of age, with a range of 12 years 8 months to 18 years 10 months.

Type of Intervention. Along with the fundamental program that NDS offers, which includes building positive interpersonal skills, creating predictable structure, and addressing academic difficulties, 37.7% of this group of students also participated in Recovery Dynamics, a group process led by a certified trainer in Recovery Dynamics which address issues of substance abuse. In addition, 42.9% of these students participated in the Sexual Awareness or Abuse Recovery groups, which addresses issues of sexuality and recovery from sexually abusive situations and is led by a Certified Sex Offender Treatment Specialist.

Source of Information. The following sources were contacted for the follow-up data:

Table 4. Sources of Follow-Up Information

Source	Number	%
Agency	14	18.2
Parent or Relative	60	77.9
Both	2	2.6
Student	1	1.3

The average time since discharge that the follow-up interviews were conducted was 27.14 months with a range of 5.45 months to 66.43 months.

Post-NDS Living Situation. The following table compares the living situation of the student immediately at discharge with the living arrangement of the student several months later at the time of the telephone follow-up interview.

Table 5. Post-NDS Living Situation

Living Situation	At time of Discharge		At time of follow-up contact	
	Number	Percentage	Number	Percentage
Parent's Home	61	(79.2 %)	31	(40.3 %)
Relative's Home	5	(6.5 %)	5	(6.5 %)
Foster Home	3	(3.9 %)	0	(0 %)
With Friends	0	(0 %)	13	(16.9 %)
With Spouse	0	(0 %)	5	(6.5 %)
Alone	0	(0 %)	1	(1.3 %)
Other	8	(10.4 %)	22	(28.6 %)

At time of discharge, the majority of students (66 out of 77 students or 85.7%) returned to the home of their parents or relatives. However, at the follow-up contact, this number had dropped to 36 students (46.8%) residing with their parents or relatives. During the months after discharge, the students who left their family home or a foster care family appeared to move into a living situation with friends (13 %) or were married and living with a spouse (5 %) or had moved into other living arrangements. This category of "Other Living Arrangement" included 3 students who were in lockdown facilities in the Criminal Justice system, 2 students were living in group homes and 2 students had moved into college campus housing.

Activities. In exploring their activities since leaving NDS, 31.2 % returned to school, 13.0 % went to work, and 45.5 % did both. Eight students (10.4 %) were described as neither going to work nor attending school. Most of the students attending school returned to high school or prep school (63.9 %), while 16 students (26.2 %) matriculated in college and 4 students (6.6 %) attended vocational school. Another two students (3.3 %) attended more than one educational program.

At time of the follow-up interviews, the respondents were asked about the activities of the students at the time of that interview. The following table compares the activities

Table 6. Activities since discharge

Activity	At discharge		At time of follow-up	
	Number	Percentage	Number	Percentage
Attended School	24	(31.2 %)	29	(37.7 %)
Worked for Pay	10	(13.0 %)	22	(28.6 %)
Both school and work	35	(45.5 %)		
Neither school nor work	8	(10.4 %)	26	(33.8 %)

While the number of students attending school increased slightly, the number of students who were working full-time more than doubled and the number of students who are neither attending school nor working tripled at the time of the follow-up telephone call.

Mental Health. Upon discharge from NDS, 26 students (33.8%) participated in treatment for mental health issues. An additional 5 students (6.5 %) were admitted to an inpatient psychiatric facility. The respondents described 16 students (21.1 %) as needing mental health services but refusing to seek treatment. Finally, 14 students (18.2 %) were admitted to another group program. Over half of the students (58.5 %) sought further treatment for mental health issues following their send-off from NDS.

Self-Concept Scale. A key component to mental health is an appropriate and positive self-concept. The following table presents the comparison between the students' pre-admission at NDS scores and their Post-admission scores as measured by the Internalized Shame Scale:

Table 7. Self-Concept Scale

Self-Concept Scale	Average	Range	Missing Data
Pre-NDS Score	13.50	0 – 28	3 students
Post-NDS Score	17.56	5 - 39	6 students

The difference between these scores was tested using a repeated measures Analysis of Variance (MANOVA). The difference between the Pre-NDS and Post-NDS scores was found to be significant at the $p < .001$ level, which indicates that only one time in 1,000 would this result occur by chance.

Of the 71 students for whom there were both Pre-Admission and Post-Admission data, 66.2 % improved in their self-concept rating. The average increase was of almost 4 points, with a range of a decrease of 10 points to an increase of 19 points.

Further testing was conducted to determine if the changes in self-concept varied as a function of prior problems the student had experienced before coming to NDS or by family situation. Change in self-concept ratings did not vary as a function of previous sexual abuse history, mental health treatment, previous alcohol or drug problems, prior court contacts, family history of alcoholism, drug use, criminal behavior or mental health problems. The change in self-concept was not related to a specific family structure, either. This change in self-concept was also uncorrelated with age at admission or length of stay at NDS. It appears that NDS program is effective in raising the self-concept in students from diverse backgrounds with a wide range of emotional difficulties. These results also suggest that the Girls' Program has been successful in addressing self-concept issues with students regardless of their age, and that the length of stay has been appropriately calibrated to each student rather than on a fixed path.

Student Adjustment Ratings. The respondents rated the student's adjustment in four areas at the time of the follow-up interview. Table 8 compares the Pre-NDS scores in these areas with the Post-NDS scores:

Table 8. Student Adjustment Comparison Scores

Area of Adjustment		Inadequate	Adequate	Good	Missing data
School	Pre-NDS	85.5 %	10.5 %	3.9 %	1
	Post-NDS	33.8 %	33.8 %	32.8 %	9
Leisure	Pre-NDS	86.7 %	10.7 %	2.7 %	2
	Post-NDS	34.7 %	40.0 %	25.3 %	2
Interpersonal	Pre-NDS	86.7 %	13.3 %	0	2
	Post-NDS	18.7 %	38.7 %	42.7 %	2
Household Disruption					
	Pre-NDS	93.3 %	6.7 %	0	2
	Post - NDS	26.7 %	46.7 %	26.7 %	2

Improvements in adjustment are dramatic. The "Inadequate" ratings decreased on all four domains of adjustment while the "Adequate" and "Good" categories increased. These improvements were found to be significant at the $p < .001$ level. At the follow-up contact, the average NDS student was being rated as "Adequate" to "Good" in these four areas. Table 9 presents the change from the Pre-NDS scores:

Table 9. Change in Adjustment

Area	Improved	Stayed Same	Got Worse	Sample Size
School	41 (60.3 %)	24 (35.3 %)	3 (4.4 %)	68
Leisure	44 (58.7 %)	28 (37.3 %)	3 (4.0 %)	75
Interpersonal	55 (73.3 %)	20 (26.7 %)	0 (0.0 %)	75
Household	52 (69.3 %)	21 (28.0 %)	2 (2.7 %)	75

Given that the NDS program is based on building relationships, it is of particular note that 73.3 % of the students improved in “Interpersonal” interactions.

Alcohol, Drugs. Overall, the percentage of students with alcohol or drug-related problems at time of the follow-up contact was significantly lower ($p < .001$) than their alcohol or drug related problems prior to admission at NDS. These results are presented in Table 10.

Table 10. Alcohol or Drug-related problems Pre-NDS and Post-NDS

	Alcohol problems	Drug Problems
Prior to NDS	29 (37.7%)	39 (50.6%)
Follow-Up Contact	8 (10.7%)	11 (14.5%)
Missing Data	2 cases	1 case

Of the students entering NDS with alcohol-related problems, 25 of 29 (86.2%) did not have problems at follow-up. Of the adolescents entering without alcohol-related problems, 4 of the 46 students (8.7 %) did exhibit problems with alcohol at the time of the follow-up contact.

Of the students entering NDS with drug problems, 31 of 39 students (79.5%) did not have drug-related problems reported at the time of the follow-up contact. Of the adolescents entering NDS without any prior drug-related problems, 3 of these 37 students (8.1 %) did exhibit problems at the follow-up contact.

Problem Evaluation Inventory. The difference between the students’ Pre-NDS behavior rating and at discharge behavior rating is presented in Table 11.

Table 11. Difference in Behavior Ratings

Behavior Rating	Mean	Range	Missing Data
Pre-NDS	3.57	2.05 – 5.38	3
Post – NDS	1.84	.79 – 4.25	23

A Repeated Measures Analysis of Variance (MANOVA) was used to test this change between the Pre-admission behavior rating and Post-admission behavior rating scores. The improvements in the scores were found to be significant at the $p < .001$ level. Of the 54 students for whom there were both Pre-NDS and Post-NDS data, 94.4 % improved on their behavior ratings.

A series of t-tests was used to determine if change in behavior ratings was correlated to any prior problems the student had had or to the student's family situation. The change in behavior ratings did not vary as a function of previous sexual abuse history, mental health treatment, previous alcohol or drug problems, prior court contacts, family history of alcoholism, drug abuse, criminal behavior, or mental health problems. Also, there was no relationship between the change in behavior ratings and the family structure of the student, the student's age at admission to NDS or the length of stay at NDS. The improvement in the students' behavior scores is not limited to specific types of problems or family backgrounds.

Consumer Satisfaction. When asked if they were satisfied with the services the student received at NDS, 60.5 % of the respondents said that they were "Very Satisfied" and 34.2 % stated that they were "Satisfied." Four respondents (5.3 %) reported that they were "Dissatisfied" with the services that the student received at NDS. Over ninety-three percent of the respondents (93.5 %) felt that NDS helped the student.

Delinquency. Overall, the percentage of students who had contact with the court system was significantly lowered at time of the follow-up contact than prior to coming to NDS ($p < .001$). These results are presented in the Table 12.

Table 12 Court contact Pre-NDS and Post-NDS

Court Contact	Pre-Admission	Post-NDS
Juvenile Court	64.9 %	23.4 %
Court of Record	13.0 %	10.8 %
Any Court Contact	73.1 %	29.7 %
Incarcerations		
None		90.4 %
One or more (1 to 4 months)		9.6 %

Success Rate Index. This index was formulated by Dr. George Giacobbe and was used in a follow-up study at Elk Hill Farm, a residential program that appears to treat a population similar to that of NDS (Note 4). The index is reported to be more sensitive to long-term success than methods that consider only whether a youth has been charged in a court of law or has been in detention or jail. By calculating the total number of months a student was **not** incarcerated by the total number of months since discharge, the impact of minor offenses vs. major offenses is taken into account.

In the current study, the Success Rate Index was 99%. The overwhelming majority of students (90.4%) had no incarcerations at the time of the follow-up contact. This does mean that 9.6% of students had some incarceration, ranging from one to four months, with a mean of 1.71 months.

Comparisons between students who completed the program and those students who left before completion. Several analyses were conducted to determine if the youth who completed the program and for whom follow-up data were obtained ($n = 77$) were different from the students who completed the program but did not have follow-up data ($n=65$) or from the students who did not complete the program ($n = 68$).

Students who did complete the program were not different from the youths who did not complete the program on the following categories: Source of referral, Age at admission, “Pre-NDS” behavioral rating scores, or “Pre-NDS” self-concept scores. In addition, no differences between these two groups were found in their prior drug history, prior history of mental health problems, or prior history of sexual abuse. Similarly, there was no difference among these groups in their participation in special education classes, and they were equally likely to be adopted. They were also equally likely to come from a single parent home and to have parents with a history of mental health problems.

There are, however, ways in which these two groups differ. Students who did not complete the program were **less likely** to have had prior problems with alcohol, ($p < .05$), but were **more likely** to have had prior contacts with the juvenile court ($p < .05$), or the court of record ($p < .05$). In addition, the students who did not successfully complete the program had significantly different family histories. They were more likely to have had a family member with a criminal history ($p < .001$), or a family member with an alcohol problem ($p < .001$) or drug problem ($p < .02$). They also were more likely to live in families on welfare, ($p < .001$) or who were unemployed ($p < .05$).

Additional analyses were completed to determine if there were significant differences between the two groups who did complete the program; the one group had follow-up data ($n = 77$) and the second group of students for which there was no follow-up data ($n = 65$). This comparison is important because it can reveal systematic differences in the students who were followed-up versus the students who could not be contacted after discharge. There were only two significant differences between these two groups. The students who did not have follow-up data tended to have better Pre-NDS behavioral rating scores compared with the students who did have follow-up data ($p < .053$, denoting a trend). In addition, there were no significant differences in the amount of change in behavioral rating from Pre-NDS to Post-NDS test scores across these two groups or in self-concept rating. One significant difference was noted. Students without follow-up data were more likely to have been sexually abused than youth with follow-up data (73.4% versus 45.9% respectively, $p < .001$). Taken together, these analyses suggest that students who were able to be contacted for follow-up were comparable to students who were not located for follow-up.

Comparison of outcome measures between students from private referral and public referrals.

Students referred from private sources (N = 28) were compared with students referred from public sources (N = 48) on their status at the follow-up contact. There were no differences between these two groups on: Help sought for mental health problems, Hospitalizations due to mental health problems, Referral for mental health services but did not go, Admission to another Group facility, Alcohol Problems, Drug Problems, or had Adult Court contacts since leaving NDS.

While general improvements were noted in all students (see Table 12), differences were noted between these two subgroups on juvenile court contacts after leaving NDS. More publicly referred students (31.3%) had juvenile court contacts since discharge than the privately referred students (10.7%), with a significance level of $p < .05$. Students from public referral sources demonstrated less improved on school adjustment ($p < .02$), leisure adjustment ($p < .009$), and household adjustment ($p < .02$). They did not, however, differ with respect to interpersonal adjustment, which highlights again the success of the NDS program in improving interpersonal interactions across all subgroups of students.

Summary and Discussion

The results of this first evaluation of the NDS Girls' Program indicate strong overall effectiveness of the program. Clinically significant improvement was noted in students with problems in school, in their interpersonal relationships, in how they handled their leisure time, and within their own homes. Improvements in self-concept were found in students from diverse backgrounds with a wide range of emotional difficulties. The overall results of this evaluation suggest that the Girls' Program has been successful in addressing self-concept issues, behavioral issues, and educational concerns with students across the age range accepted to the program.

The average student accepted into the Girls' Program during this first six year period was 15 years 4 months old and she completed her program in 14 ½ months. Before coming to NDS, the average student displayed poor adjustment in her prior school placement, in leisure activities, within her own home, and in her interpersonal skills. A large percentage of the students (88.3%) had participated in some form of psychotherapy and over a third of them were found eligible for special education services by their school system. Half of the students had problems with drug use and over a third of the students had also abused alcohol. The families of the students often have had a history of difficulties as well. Slightly less than half of the students (45.5%) come from single parent families, as compared with 28% of children living in households headed by a single parent (U.S. Census Report, 2000). The NDS student may have a family history which includes a number of difficulties, such as a family member having a criminal record, a drinking or drug problem, or a history of mental disorder.

At the time of her send-off from NDS, the average student in this sample was 16 years 7 months of age and have been at the program from 9 ½ months to 19 1/3 months, with the average stay being 14 ½ months. Two out of three students improved their self-concept rating on the ISS by an average of 4 points. It is of particular interest that these improvements occurred in students across the age range and despite any of the previously reported personal or family-related problems. Furthermore, the Girls' Program demonstrated these gains in self-concept regardless of the length of stay of the student. This data suggests that the Girls' Program is successful in targeting the specific needs of each student rather than having a fixed programmatic pathway.

Improvements in the students' adjustment in the domains of school, leisure activities, interpersonal skills, and within their homes were similarly impressive. The students improved their ratings from "Inadequate" to "Adequate" or "Good." The average successful graduate from NDS was rated as "Adequate" to "Good" in all four domains. Based on the focus of NDS on building positive relationships, it was also interesting to note that 73.3% of the students improved in the area of "Interpersonal" interactions.

Students who successfully completed the NDS Girls' Program were reported as having significantly lower difficulties with drugs and alcohol upon follow-up and their behavior ratings improved to the level of clinical significance as well. Again, these improvements in their behavioral ratings were not confined to a specific subgroup of these students; improvements were noted regardless of prior personal or family problems. This finding suggests that the program at NDS is highly successful with a broad range of students experiencing a wide range of difficulties.

Contact with the juvenile justice system was also significantly lower at the time of the follow-up contact than the rates of court contact prior to attending NDS. Any court contact dropped from 73.1 % of the students to 29.7%. Over 90% of the students had spent no time incarcerated since discharge.

While the lower rates of court contact and alcohol and drug-related problems are all very positive, there is some concern about the decrease in students attending school or working at time of follow-up. The number of students who are neither attending school nor working increased from 8 to 26, which may be accounted for by the maturation of the students. Five of the students, for example, were living with a spouse at the time of follow-up and may be caring for children rather than working outside of the home or going to school.

The Success Rate Index, which is described as sensitive to long-term success, was found to be 99%. Similarly, when asked if they were satisfied with the services program at NDS, 94.7% of the respondents were "Very Satisfied" or "Satisfied." From both an objective measure (the Success Rate Index) and from the subjective opinion of the respondents to the follow-up survey, the program at NDS was found to be remarkably successful.

Notes

1. New Dominion School, P.O. Box 540, Dillwyn, Va.
2. Internalized Shame Scale (ISS), David R. Cook, Ed. D., copyright 1990.
3. Internalized Shame Scale (ISS). Multi-Health Systems, Inc., P.O. box 950, Tonawanda, N.Y. 14120-0950.
4. Elk Hill Farm, Inc., P.O. Box 99, Goochland, VA. 23063