

Functional Family Therapy in a Probation Setting: Technical Appendix

Due to the amount of analyses performed in this study and the amount of detail necessary to understand the complexity of the analyses, we felt it important to create a separate document that can disseminate that information, but does not dilute the primary message for those only concerned with the basic metrics.

CJAA

In 1997, the Washington State Legislature passed E2SHB 3900, part of which created the Community Juvenile Accountability Act, which dictated that only programs shown to reduce recidivism in a cost-effective manner will be funded under this act. This resulted in a review of research from across the country, which identified five programs for possible implementation. Of these five programs, the juvenile courts selected Aggression Replacement Training (WSART) and Functional Family Therapy (FFT).¹

The second part of the process was for the Washington State Institute for Public Policy (WSIPP) to maintain a list of Evidence-Based, Research-Based, and Promising Practices. WSIPP has maintained these lists and publish periodic updates to the inventory², which include the programs and their benefit-cost results.³ As discussed in the FFT report, the WSIPP

¹ WSIPP. (January 1999). The Community Juvenile Accountability Act: Research-Proven Interventions for the Juvenile Courts.

² The benefit-cost result is calculated by the combining costs and benefits from the perspectives of participants, taxpayers, and others in society. A full accounting of their method can be found in the document in the next footnote. The meta-analyses are conducted by WSIPP and a list of the studies used for each program is maintained by WSIPP.

³ Washington State Institute for Public Policy (June 2016). Benefit-cost technical documentation. Olympia, WA: Author.

Inventory repeatedly lists FFT (\$8.94:\$1)⁴ as having the second-highest benefit-cost ratios for juvenile probationers in Washington State.

The third part of the process involves regular testing of program outcomes to ensure that programs are maintaining reductions in recidivism and positive cost-benefits for the community and state. This process began with Barnoski's 2004 study of WSART and FFT, but, until now, there has not been another assessment of these programs. Without regular testing of program outcomes, we rely on, potentially, outdated information that does not reflect current practices or populations.

Data and Methodology

Therapist Adherence

The Functional Family Therapy (FFT) therapist adherence score came from a separate dataset created and controlled by those that oversee the FFT program and was tied to an identifier that is not automatically attached to the recidivism data. We linked the datasets directly and analyzed recidivism at the therapist level.

FFT uses a scale of 0.0 to 6.0 for their therapist adherence ratings and scores below 3.0 are considered to be not competent. For the purposes of this study, we attempted to add more precision by further dividing therapist adherence scores into competent and highly competent ratings. The highly competent therapists have a rating of 5.2 or above, as this represented, approximately, the top ten percent of quarterly therapist adherence ratings. This was approved by the FFT Quality Assurance Specialist for Washington State before we added it to our analysis.

⁴ WSIPP. (February 2015). What Works and What Does Not? Benefit-Cost Findings from WSIPP.

The lowest observed quarterly score during the study timeframe was 0.05 and the highest was 6.0, with a mean score of 3.7.

Matching

The effect of the matching is evident in the average mean propensity scores before and after the matches. In FFT, the difference between the mean propensity scores for the control and treatment groups went from .232 to .022⁵.

FFT Average Propensity Scores Before and After Matching		
	Control Group	Treatment Group
FFT – Before match	.256	.488
FFT – After match	.489	.511

In addition to documenting the change in propensity scores as a measure of improved similarity between the two groups, we analyzed the standardized mean differences for each variable in the matching program. The standard mean differences were calculated both before and after the propensity score matching was conducted. While several variables showed wide discrepancies prior to being matched, all but one⁶ fell within the preferred range of less than 0.1

⁵ For additional information on the study subjects’ demographics before and after matching, see Appendix C.

⁶ The standard mean difference for Dynamic Risk Aggression decreased from -0.17 to 0.12.

after matching.⁷ However, it is important to remember that while the whole treatment and control groups were matched, they were not matched within sub-groups. This could result in treatment and control groups that look very different from each other within a given demographic group.

FFT Standard Means and Deviations		
Variable	Pre-Match SMD	Post-Match SMD
Male	0.14	0.04
Female	-0.14	-0.04
Age	0.41	-0.03
Dynamic Risk Skill Factors	-0.25	0.06
Dynamic Protective Skill Factors	0.25	-0.02
Criminal History Factors	0.47	-0.05
Static Risk School Factors	0.00	0.04
Static Protective School Factors	-0.02	-0.06
Dynamic Risk School Factors	0.18	0.02
Dynamic Protective School Factors	-0.18	-0.02
Dynamic Risk School History Factors	-0.26	-0.03
Dynamic Protective School History Factors	-0.35	-0.02
Dynamic Risk Freetime Factors	0.08	-0.01
Dynamic Protective Freetime Factors	-0.17	-0.02

⁷ Guo, S. and Fraser, M.W. (2010). Propensity Score Analysis. Thousand Oaks, CA: Sage Publications, Inc.

Variable	Pre-Match SMD	Post-Match SMD
Static Protective Freetime Factors	-0.15	0.02
Static Protective Employment Factors	0.12	-0.02
Dynamic Protective Employment Factors	0.21	-0.01
Static Risk Social History Factors	0.15	0.00
Static Protective Social History Factors	-0.11	0.00
Dynamic Risk Relationship Factors	0.22	-0.04
Dynamic Protective Relationship Factors	-0.11	-0.03
Static Risk Family History Factors	0.00	-0.07
Static Protective Family History Factors	0.02	0.05
Dynamic Risk Family History Factors	--	--
Dynamic Protective Family History Factors	--	--
Dynamic Risk Current Family Factors	-0.02	-0.09
Dynamic Protective Current Family Factors	-0.12	0.07

Variable	Pre-Match SMD	Post-Match SMD
Static Risk Alcohol and Drug Factors	0.49	-0.06
Static Protective Drug and Alcohol Factors	-0.17	-0.02
Dynamic Risk Current Drug and Alcohol Factors	0.11	0.02
Dynamic Protective Current Drug and Alcohol Factors	-0.16	-0.04
Dynamic Risk Past Drug and Alcohol Factors	0.27	-0.06
Dynamic Protective Past Drug and Alcohol Factors	-0.05	0.02
Static Risk Mental Health Factors	-0.20	0.01
Static Protective Mental Health Factors	0.24	0.02
Dynamic Risk Current Mental Health Factors	-0.16	0.01
Dynamic Protective Current Mental Health Factors	0.38	-0.01
Dynamic Risk Past Mental Health Factors	-0.17	0.01
Dynamic Protective Past Mental Health Factors	-0.24	-0.01
Dynamic Risk Attitude Factors	-0.17	0.12
Dynamic Protective Attitude Factors	0.10	-0.01
Dynamic Risk Aggression Factors	-0.44	0.08
Dynamic Protective Aggression Factors	0.28	0.01

Gender

Beyond the overall felony recidivism and felony recidivism by therapist adherence category analyses, we examined outcomes for several demographic variables to try and provide

more insight into the results. One of the variables of particular interest to stakeholders is gender. The large majority of participants in FFT are male, consistent with participation in the criminal justice system. Males showed a 2.7% decrease in felony recidivism outcomes from the control group to the treatment group, representing a 12.2% reduction in felony recidivism. For females, the differences between the treatment and control groups was 3.3%, representing a 32.7% decline in felony recidivism. Neither the male nor the female results was statistically significant.

FFT Felony Recidivism by Gender			
	Group	Number of Subjects	Felony Recidivism Percentages (%)
Males	Control Group	303	22.1
	Treatment Group	294	19.4
Females	Control Group	138	10.1
	Treatment Group	147	6.8

Race/Ethnicity

Like gender, additional analysis was done among racial and ethnic groups within the study. The racial/ethnic classification was based upon self-identification and only the largest three groups (White, Black, and Hispanic) were included in the below table. Other racial groups were included in the study (American Indian/Native Alaskan, Asian, Native Hawaiian/Pacific Islander, and Other race); however, their numbers were too small to draw reasonable conclusions and, while they were included in the larger study, they were not included in the table.

Among Whites who participated in FFT, their felony recidivism numbers were exactly the same. Blacks in FFT saw an 8.5% decrease in felony recidivism, which represents a 27.5% reduction in felony recidivism. Hispanics in FFT had a 10.3% decrease in felony recidivism, equivalent to a 36.0% drop in felony recidivism rates. None of the comparisons between treatment and control groups among the different racial groups were statistically significant.

FFT Felony Recidivism by Race			
	Group	Number of Subjects	Felony Recidivism Percentages (%)
White	Control Group	279	13.3
	Treatment Group	279	13.3
Black	Control Group	55	30.9
	Treatment Group	49	22.4
Hispanic	Control Group	77	28.6
	Treatment Group	82	18.3

Age

It is important to note that although we analyzed each age from 10 to 18, the groups at each end of that range were small and were combined with the neighboring groups until we believed they were large enough to be analyzed on their own. Also, we believe it is important to note the trend in felony recidivism across age categories. The largest felony recidivism rates and greatest increases in felony recidivism from control group to treatment group happened before age 16. The downward trajectory in felony recidivism rates and greatest reductions in felony recidivism from control group to treatment group began at age 16. These rates drop consistently

after age 15 so that the 17 and 18 year old category has the lowest felony recidivism rates of any group. This finding is consistent with criminological literature and the age-crime curve⁸.

FFT participants showed a similar downward trend beginning with the age 16 group. The age 15 treatment group had a 21.2% felony recidivism rate, which was 1.4% higher than the control group. However, the rates decrease in subsequent age groups and are lowest for the oldest participants. In the 17 and 18 year old treatment category, there is a 10.0% felony recidivism rate, which is 3.2% lower than those 17 and 18 year olds that were eligible, but did not participate in FFT. None of the comparisons between treatment and control groups within each of the age categories, nor groupings of those 15 and under, or 16 and older, were statistically significant.

FFT Felony Recidivism by Age			
	Group	Number of Subjects	Felony Recidivism Percentages (%)
11-14 years	Control Group	101	23.8
	Treatment Group	101	17.8
15 years	Control Group	121	19.8
	Treatment Group	104	21.2
16 years	Control Group	105	17.1
	Treatment Group	125	12.8
17-18 years	Control Group	114	13.2
	Treatment Group	111	10.0

Risk

⁸ Farrington, D. (1986). Age and Crime. *Crime and Justice*. Vol. (7). P. 189.

The risk categories are important to this discussion as they capture a number of factors not included in the other demographic categories. However, they are also complicated for this same reason. Risk categories are not a single variable, but rather a composite variable consisting of risk and protective scores based upon the individual's criminal history, school, family, aggression, employment, and other factors, such that two individuals with the exact same scores may be very different based on the individual components of the risk assessment instrument.

Despite the potential differences, the results show consistency. The high-risk control and treatment groups recidivated at a higher rate than their moderate-risk counterparts and the lowest felony recidivism score in the high-risk group was still greater than the highest felony recidivism rate in the moderate-risk group.

The treatment groups found decreases in felony recidivism among both the moderate and high risk groups. The moderate risk treatment group had a 9.1% felony recidivism rate which was 6.7% less than the felony recidivism rate for the control group. The high risk treatment group recidivated 20.2% of the time, which was a 0.8% decrease over the control group (21.0%).

FFT Felony Recidivism by Risk Level

	Group	Number of Subjects	Felony Recidivism Percentages (%)
Moderate Risk	Control Group	222	15.8
	Treatment Group	198	9.1
High Risk	Control Group	219	21.0
	Treatment Group	243	20.2

Jurisdiction

The jurisdictional comparison is made difficult because some jurisdictions ended up with a very small number of subjects in either the control, treatment, or both categories. Even the jurisdiction with the largest representation in the matched sample had only 49 and 54 subjects in the control and treatment groups, respectively. The fourth most represented jurisdiction in the matched sample had only 27 and 26 in the control and treatment groups, respectively.

The jurisdictional analysis showed wide discrepancies from one county to another. Such variances are demonstrated in comparing Pierce County to Benton/Franklin Counties, for example. As discussed above, much of this has to do with the size of the groups, but there are likely differences related to the particular therapists for that jurisdiction, the treatments available to the control group, the jurisdiction's particular demographics, and possibly the county's practices related to EBP assignment. .

FFT Felony Recidivism by Jurisdiction

Jurisdiction	Group	Number of subjects	Felony Recidivism (%)
Pierce County	Control Group	49	34.7
	Treatment Group	54	16.7
King County	Control Group	49	32.7
	Treatment Group	43	27.9
Benton/Franklin Counties	Control Group	30	6.7
	Treatment Group	34	20.6
Clark County	Control Group	27	22.2
	Treatment Group	26	23.1
Spokane County	Control Group	26	19.2
	Treatment Group	24	25.0
Whatcom County	Control Group	24	12.5
	Treatment Group	22	36.4
Thurston County	Control Group	24	8.3
	Treatment Group	18	5.6

Jurisdiction	Group	Number of subjects	Felony Recidivism (%)
Yakima County	Control Group	19	21.1
	Treatment Group	20	10.0
Grant	Control Group	19	42.1
	Treatment Group	14	21.4
Snohomish County	Control Group	14	14.3
	Treatment Group	18	11.1
Skagit County	Control Group	14	7.1
	Treatment Group	16	0.0
Kitsap County	Control Group	14	21.4
	Treatment Group	12	25.0
Cowlitz County	Control Group	10	10.0
	Treatment Group	10	20.0
Grays Harbor County	Control Group	9	33.3
	Treatment Group	9	0.0
Lewis County	Control Group	4	25.0
	Treatment Group	8	0.0

Jurisdiction	Group	Number of subjects	Felony Recidivism (%)
Chelan County	Control Group	5	0.0
	Treatment Group	6	16.7
Island County	Control Group	4	25.0
	Treatment Group	4	0.0
Pacific/Wahkiakum County	Control Group	3	33.3
	Treatment Group	4	25.0
Douglas Counties	Control Group	3	66.7
	Treatment Group	2	50.0
Skamania County	Control Group	2	0.0
	Treatment Group	3	0.0
Okanogan County	Control Group	1	100.0
	Treatment Group	2	0.0
Stevens County	Control Group	2	0.0
	Treatment Group	1	0.0
Kittitas County	Control Group	1	0.0
	Treatment Group	1	0.0
Whitman County	Control Group	1	100.0
	Treatment Group	1	0.0

Starters v. Completers

One area that is not a demographic, but does merit discussion is felony recidivism rates among those who completed their program, compared to those we know started their program, but did not, or were not able to, complete the program. Drawing conclusions from these data is complicated by the notion that those who completed the program demonstrate abilities that likely also contribute to them not recidivating. Before discussing the felony recidivism numbers, it is important to note that the majority of subjects that started FFT also completed the program (77.3%). It is also important to note that this number does not reflect the matched sample, as it is not necessary to compare the treatment group to the control group in this case. We do, however, include an analysis of the matched group in order to examine the difference between the matched subjects who completed the program to the matched control group.

In the unmatched sample, the felony recidivism rate of those who completed FFT was 16.7% as opposed to 23.6% for those who started, but did not complete the program. This

represents a 6.9% decrease in felony recidivism for those who completed FFT, which was a statistically significant reduction.

Unmatched FFT Recidivism Starters v. Completers		
Type of Recidivism	Started, did not complete (N=123)	Completed (N=418)
	Recidivism Percentages (%)	Recidivism Percentages (%)
Misdemeanors Only	29.3	34.6
Felonies	23.6	16.7
Violent Felonies	6.5	6.8

As discussed in the report, because of the statistically significant decrease in recidivism from those who started but did not finish FFT compared to those who completed the program, we included matched comparison of the felony recidivism rates based on a per protocol research approach. For this method, we followed the same procedures for creating the control group, except instead of matching them to all FFT participants from the study period, we matched them to those who began FFT during the study period and were coded as having completed the program. The completers had a 14.5% felony recidivism rate and the control group had a 17.8% felony recidivism rate. The 3.3% reduction in felony recidivism from the control group to those who completed WSART was not statistically significant.

Per Protocol Matched FFT Recidivism Findings

	Number of Subjects	Misdemeanor Recidivism Percentages (%)	Felony Recidivism Percentages (%)	Violent Felony Recidivism Percentages (%)
Control Group	359	22.3	17.8	8.1
Treatment Group	359	26.5	14.5	6.1

Appendix A: **Washington Evidence Based Program Eligibility**

FFT

At least moderate risk level and

Family problems as indicated by a dynamic risk score of at least 6 (Domain 7b; Items 7-16)

Appendix B: Description of Service Delivery for Each Evidence-Based Program⁹

The following are brief descriptions of how each evidence-based program is delivered. These provide a basis for understanding direct service costs. The juvenile courts incur additional costs to assess, assign, and manage the youth provided these services.

Functional Family Therapy (FFT): FFT is a structured home-based family intervention for moderate- to high-risk youth. Trained FFT therapists have a caseload of ten to 12 families, and the intervention involves 12 visits during a 12-week period. Therapists travel to the family's residence to provide FFT. Washington State has its own FFT specialist who oversees training and quality assurance, and FFT consultants who work with groups of FFT therapists to maintain program fidelity. FFT, LLC is the organization that developed FFT and it also provides therapist training and consultation services. Juvenile court personnel and private contractors provide FFT services.

⁹ Barnoski, R. (2004). Outcome Evaluation of Washington State's Research-Based Programs for Juvenile Offenders. Washington State Institute for Public Policy. p. 2.

Appendix C: Additional Pre- and Post-Matching Demographics

FFT Control and Treatment Groups Demographic Comparison

	Pre-Matching FFT Control (N=1,178)	Pre-Matching FFT Treatment (N=586)	Matched FFT Control (N=441)	Matched FFT Treatment (N=441)
Male	73.5%	67.2%	68.7%	66.7%
Female	26.5%	32.8%	31.3%	33.3%
Average Age	15.9	15.3	15.5	15.5
Average Risk Scores				
Criminal History	7.9	7.0	7.1	7.2
Social History	8.9	8.9	8.7	8.9
Aggression	2.9	4.0	3.7	3.6
Drugs/Alcohol	14.9	12.5	13.2	13.4
Family	3.1	3.0	2.6	2.9
Prior Family	-0.4	-0.4	-0.5	-0.3
Mental Health	-5.8	-4.7	-5.2	-5.2
School	7.1	6.8	6.9	6.8

	Pre-Matching FFT Control (N=1,178)	Pre-Matching FFT Treatment (N=586)	Matched FFT Control (N=441)	Matched FFT Treatment (N=441)
Moderate Risk Level	42.1%	46.3%	50.3%	44.9%
High Risk Level	57.9%	53.8%	49.7%	55.1%
Race				
White	61.6%	66.0%	63.3%	63.3%
Black	11.2%	11.4%	12.5%	11.1%
Hispanic	19.5%	16.7%	17.5%	18.6%
Age				
11-13	4.8%	10.8%	7.5%	7.5%
14	11.4%	17.4%	15.4%	15.4%
15	21.3%	23.9%	27.4%	23.6%
16	24.6%	26.3%	23.8%	28.3%
17	30.1%	19.3%	21.1%	22.2%
18	7.8%	2.4%	4.8%	3.0%