

“SOS FIRES Family Interview Study”
Final Report Document

Funded by

“Assistance to Firefighters – Fire Prevention and Safety Programs”
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Conducted by:

SOS FIRES: Youth Intervention Programs

INTRODUCTION

In September of 2003, SOS FIRES submitted a grant proposal to FEMA for this grant. The grant project proposed the following:

The purpose of the proposed project is to formalize a team of experienced prevention specialists and knowledgeable researchers in order to extend the statistical sample of information from a pilot prevention research project begun in 2002. This research project involves in-depth interviews with children and families who have participated in youth firesetting intervention programs in the Pacific Northwest states of Oregon, Washington, and Alaska. It will also connect this data collection to other nationally recognized efforts to accomplish similar outcomes.

The main research goal for this project will be to define the characteristics of the nuclear family of the child or adolescent who set fires. From this major topic, the research team will meet to develop an agenda and priority list of specific research questions. The team believes that it is essential to explore this topic in order to improve intervention strategies for youth who set fires and their families. Objectives toward this research goal include:

- *Collect behavioral data on 60 participant families (20 families x 3 states) through in-depth face-to-face, key informant interviews with the child/adolescents, families and caretakers, and fire service professionals for reported firesetting incidents. This will be coupled with the 60 interviews from the prior year.*
- *The child/family/fire department interviews will be collected from 3 states from the Western region of the U.S (Alaska, Oregon, Washington):*
- *Two of these states (Washington and Alaska) have entered into a collaboration with NASFM in their recent OJJDP grant to provide statewide training in coalition building for juvenile firesetting intervention programs.*
- *Report results from this pilot study to meet grant requirements, and develop appropriate materials for dissemination of information to the participants, to other consumers and to professionals. This will include on-line presentation through the SOS FIRES web site.*
- *Promote the use and value of continued training and data collection in the sites participating in the program as well as pursue future grants to more thoroughly explore the other regions of the U.S.*
- *Work toward sustainability of the prevention partnership and future research projects.*
- *Distribute Smoke Alarms and conduct home fire safety inspections for all 60 households receiving services. Due to the firesetting behavior of the children in each home, these families present a considerably higher risk profile for fire loss than other families in any community.*

SOS FIRES sought out several partnerships in order to carry out this plan. Primary to the project are Fireproof Children; Alaska Injury Prevention Center; Burgess Consulting, CoHear, and the SOS FIRES Board of Directors and select Advisory Committee members.

The grant request was for \$170,751 federal dollars with a \$73,180 in-kind grant from participating partners. This was approved on September 9, 2004 with the grant term set to begin on June 18, 2004 and end on June 17, 2005. An amendment to the grant extended the grant period to September 30, 2005.

KEY LESSONS LEARNED FROM RESEARCH

Along with the valuable findings, other notable lessons were learned during the course of this project. They are listed below:

- Telephone and electronic communications were not adequate opportunities for a project of this nature. Meetings, with all team members present, provided the most value for discussion and recording of findings.
- Utilization of tools and equipment from the previous grant proved valuable and economical. Also, the many lessons learned on conducting a project like this was valuable as well.
- The number of individuals performing interviews remained limited to two. This created better consistency than the previous.

DATA COLLECTION PROJECT

- The data collection project continued with the development of the data reports. Consistent reporting criteria is critical for comparison. SOS FIRES created an on-line downloading system for both the database and the report program. Key to this project is advertising its availability. The on-line repository for data will developed in a future grant.

INFORMATION SHARING

- SOS FIRES will make all findings available to FEMA and post all information on their web site (www.sosfires.com). Complete reports, in printed format, will be available on request or be accessible as a free download from the web site. The data collection reports will be advertised through the web site as well and provide interested persons the information necessary to make a purchase.

METHODS

The Research Team originally consisted of six members. These are listed below:

- Don Porth – Principle Investigator
- Donna Burgess – Research Director
- Lisa Lapsansky – Interviewer
- Niki Pereira – Interviewer
- Brian Whitney – Behavior Consultant

Survey questions were prepared in a qualitative format to mirror the questions from the first year study. Many questions were refined due to lessons learned during year one. The areas of study included:

- Family demographic information including primary and secondary residences.
- Medical history of the child/adolescent including prenatal history, birth events, and perinatal health.
- Early childhood health and development including any behavioral challenges.
- School history including preschool, kindergarten, and grades up to and including current placement.
- History of family attempts to teach child/adolescent to deal with conflict, anger and frustration.
- Information about child/adolescent's friends.
- Information about the amount of time the child/adolescent spends with friends, family, or alone.
- Information about the typical television, movies, and video games watched or played by the child/adolescent and any restrictions placed on those activities by parents or guardians.
- Information about types of activities that would be considered "risk-taking" engaged in by the child/adolescent with or without his/her friends.
- Information about the pain tolerance experienced by the child/adolescent.
- Information about any suicidal ideation on the part of the child/adolescent or any of his/her friends.
- Information about whether the child/adolescent had ever been the victim of one or more incidents of bullying and whether the child/adolescent had ever bullied other young people.

The two interviewers selected for the study were experienced youth firesetting intervention specialists. They participated in the year one study and had acquired additional interviewing skills to perform this type of work.

The Research Director, with the assistance of the Alaska interviewer, developed the following research materials: an **Adult Consent form** (to be signed by the appropriate parent[s] or guardian[s]), a **Youth Assent form** (to be signed by the child or youth involved in the Juvenile Fire-setter Program), an **Adult Interview Protocol**, and a **Youth Interview Protocol** (all research tools included in Appendix A). The Adult Consent form and Youth Assent form met all Human Subjects requirements as stated in federal law and National Institutes of Health regulations. All research forms were reviewed and approved by the full Board of Directors of SOS FIRES: Youth Intervention Programs.

Transcription services were needed to convert the recordings to electronic files that could be qualified by computer software. This service was contracted through the Alaska Injury Prevention Center. The transfer of all voice and written files would be packaged electronically (e-mail or CD) to facilitate quick and easy transfer. The transcriptionists both signed Confidentiality Agreements, and none of the transcribed documents contained any names. Single initials replaced all names. Only the Research Director

could relate the transcripts to the file documents or the digital interviews. She collected all original research materials and keeps them in a locked, fireproof file cabinet to which no one has access except herself.

On May 11, 2005, FEMA agreed to a 60-day extension for the project. This request was submitted because the notification of grant receipt arrived to SOS FIRES 60 days into the grant period.

The database development portion of the project was completed in the year one grant. In this grant, the report writing functions were created that would allow comprehensive and consistent reporting from the database.

Phase three (not to be grant funded) would develop an Internet web site, hosted by SOS FIRES, to create a download destination for sharable data. This would allow users the option to enter into a larger data evaluation program with the opportunity to query either their own data or the entire master data set. It would also develop a membership program to manage the input and output of data in the master, web-based system.

FINDINGS

The findings are summarized from both quantitative (SPSS) & qualitative (N6) data analyses. The findings are organized by 1) major demographic results and 2) results related to specific research topics posed by the research team at the beginning of the study (see Method Section). Findings from the 2003 data alone are cited first starting with the comparison of “Gender by Status,” and then they are compared to the 2002 data set. The two data sets (2002 and 2003) have been reported separately for reasons explained below in the “Frequency of Status” section.

It should be made clear that some findings, for example results about “whether a child had a high pain tolerance,” or “whether they were bullied,” are the results of both quantitative and qualitative data. For those results, the Research Director referred to the quantitative data, and then compared it to the answers given by both the parent/guardian and the youth in their interviews. Using both quantitative and qualitative data sets made the answers; therefore, the data for those variables more reliable.

Data Available for Analysis

For 2003, the interviewers collected data in 3 states – Alaska, Washington, and Nevada. The goal was to interview 20 families, parent/guardians and the youth, in each state. For 2003, the number of families that could be contacted and kept appointments was 57, so all 57 were used in both quantitative and qualitative data sets.

In 2002, the data collectors for the SOS FIRES Family Interview Study met their goal of collecting interviews for 60 families; at least 20 families in each of 3 states – Alaska, Oregon, and Washington. Quantitative data was collected for 61 cases. After data cleaning, 59 cases were usable and are reported in the following results. Qualitative data

were also collected for 61 families; for each family, an interview was completed with the parent(s) or legal guardian(s) and a separate interview was conducted with the child or adolescent who had been involved in a Juvenile Firesetting Intervention Program. After transcription and data cleaning, 105 interviews (i.e., 53 cases with one parent interview missing) were included in the reported data set.

Case Reliability Findings

Number of Cases by State. The number of families enrolled in the study in each state was consistent with the number expected each year within a reasonable margin of error for applied “action research.” In 2003 there were 13 families available for interviews in Alaska, 23 in Nevada, and 21 in Washington. This gave a total of 57 cases for 2003. For the 2002 study, there were 20 families interviewed in Alaska, 20 in Oregon, and 21 in Washington for a total of 61 cases.

Frequency of Status (i.e., labels) at Interview Compared to Portland Data.

The major reason the research team decided to report the 2002 and the 2003 data sets separately was the widely divergent number of cases classified as **simple** and **complex** each year. Even compared to the established intervention program in Portland, Oregon, it is easy to see the shift in status from 2002 to 2003. Table 1 shows the number and percent of “simple” cases compared to “complex” cases in each data set.

Table 1. Number and Percent of Cases by Status and Data Set

Status	Study # '02	Study % '02	Study # '03	Study % '03	Portland #	Portland %
complex	24	39%	39	68.4%	409	33%
simple	36	61%	17	29.8%	818	67%
missing			1	1.8%		
Total	60 cases	100%	57	100%	1227	100%

The SOS FIRES sample for 2002 compared favorably to the established community data set (Portland) for distribution of types of cases. The “complex” cases comprised approximately 30% to 40% of the samples in both sets regardless of size (i.e., number of cases), while the “simple” cases made up 60% to 70% of the samples. This means that the SOS FIRES data for 2002 can be considered representative of the population sampled in the three states that participated.

Unlike the Portland and 2002 data sets, the cases for 2003 were almost the opposite. In the second year 68.4% of the cases were classified “complex” at the time of the study interview and only 29.8% were classified as “simple” by the study interviewers. The reason for the reversal in “status” of cases appears to be the number of cases the interviewers reclassified from simple when the family did its initial intervention service to complex when they completed their research interview.

The number of cases reclassified from Simple (At Program Interview) to Complex (At study Interview) follows:

'02 Data Set: 4/61 cases = 6.5%

'03 Data Set: 11/57 cases = 19.0%

Technically, this would be called “observer drift.” That refers to the shift in observation the interviewers made as a result of their experience in the 2002 study. The only reasonable conclusion the research team could make was that “We must take into account the shift in perception on the part of the interviewers, between the 2002 and the 2003 studies.” Because the interviewers were more aware of the signs and symptoms of complex conditions to look for in the second year of the study, they purposely made more referrals to outside services, and categorized more youth as complex.

Because the youth status categories were so different between 2002 and 2003, the research team decided to keep the two data sets separate and to compare the two years throughout the following analyses. The team believed that the status issue had great importance for how Juvenile Firesetting Intervention Programs were constructed, and this should be addressed throughout the *2003 Final Report*.

Frequency of Status (i.e., labels) at Interview by State.

Another check was to compare the number of cases in each status category collected in each state in the study. The results are reported in Table 2.

Table 2. Number and Percent of Cases by Status and State

Status	AK #	AK %	NV #	NV %	WA #	WA %	Total #
complex	10	77%	13	57%	16	76%	39
simple	2	15%	10	43%	5	24%	17
Missing value	1	8%	0	0%	0	0	1
Total	13	100%	23	100%	21	100%	57

From Table 2, all three states followed the same profile of “complex” and “simple” cases as did the analysis of total status; that is, all three states had more complex cases than simple. Fewer complex cases were reported in Nevada where all the interviews were conducted in a fire station rather than in the families’ homes. It is unknown at this time whether interviewing in the home makes a definitive difference in the information obtained; however, the Researcher interviewer and the Research Director both felt they obtained more thorough information from home interviews.

Demographic Findings

Frequency of Gender Compared to Portland Data.

An important measure of the accuracy of the sample collected for the current study was of the number and percent of cases by gender compared to the established data set in Portland. The comparison of the 2002 and 2003 study cases to the Portland data set are shown in Table 3.

Table 3. Comparison of Number and Percent of Gender of Cases

Gender	Study # '02	Study % '02	Study # '03	Study % '03	Portland #	Portland %
Female	8	13%	5	9%	409	15%
Male	52	85%	51	89%	2305	85%
Missing	1	2%	1	2%		
Total	61	100%	57	100%	2714	100%

For the small number of cases collected, the SOS FIRES Family Interview Study sample compares favorably to the established community data set for distribution of gender. The Portland data set shows 15% for females and 85% for males. The SOS FIRES study cohort had 13% females, 85% males and 2% missing values in 2002. In 2003 females were a bit lower at 9%, with males at 89% and 2% missing values. These values are within the limits expected for applied research.

Gender By Status Comparison for 2003.

In 2003, the research team asked how gender compared to status of the cases interviewed.

Table 4. Comparison of Females and Males by Status in 2003

Status	Female	Male	Total
complex	2	37	39
simple	3	14	17
missing	0	0	1
	5	51	57

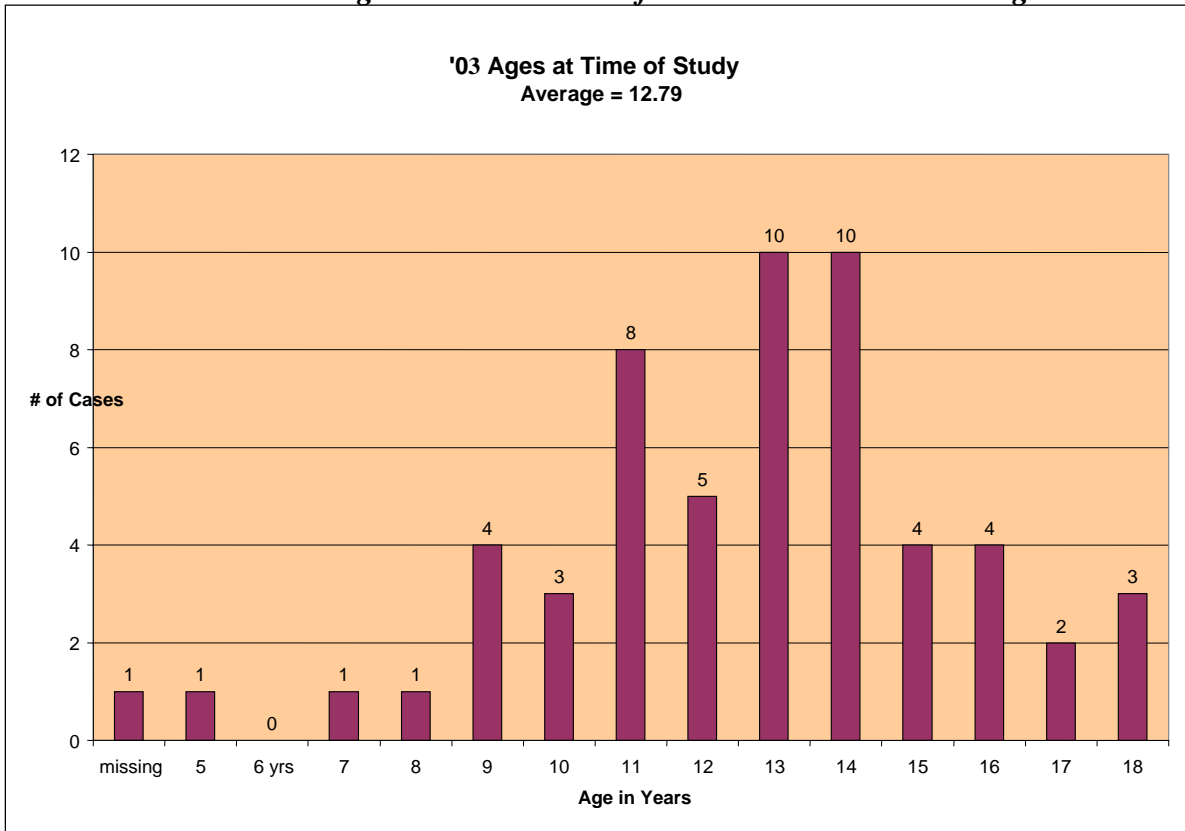
Table 4 shows a comparison of the raw number of females and males who were categorized as “complex” and “simple” from the 2003 study. Because there were only 5 females in the study, it was not statistically appropriate to compare even percentages among the groups. Nothing can be concluded about the severity of status among young women from the 2003 sample. Likewise, the 2002 group had only 8 females, so comparisons would have been statistically fruitless. Because the research team had

chosen not to combine the data from 2002 and 2003, no calculations were run to determine the severity of status of the entire group.

Distribution of Child/Adolescent Age at Time of Study Beginning with 2003.

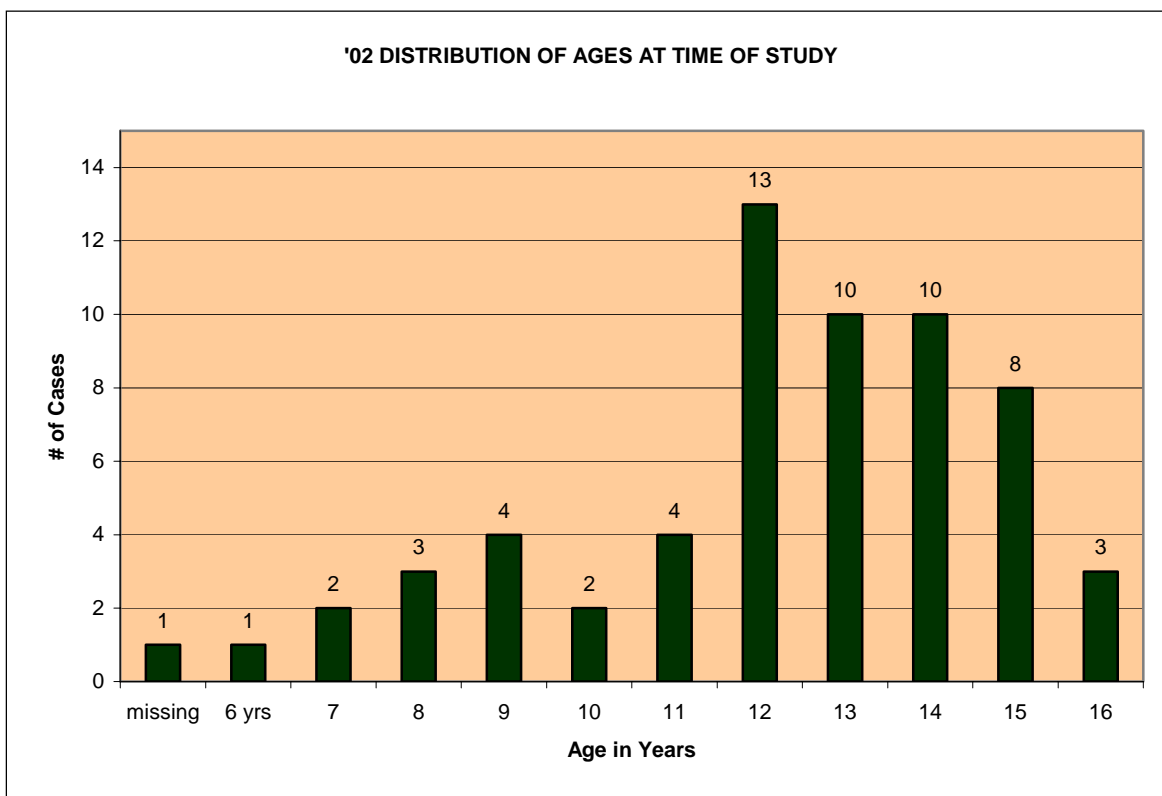
The next demographic measure was the range and distribution of age in years of the children and adolescents interviewed for the study. These data are represented in Chart 1 for 2003.

Chart 1. 2003 Range and Distribution of Children and Adolescent Ages



The ages of the participants during 2003 ranged from 5 years to 18years-old old. As expected from Juvenile Firesetting Intervention Program records, the majority of the young people ranged from 11 to 14 years-old.

Chart 2. 2002 Range and Distribution of Children and Adolescent Ages

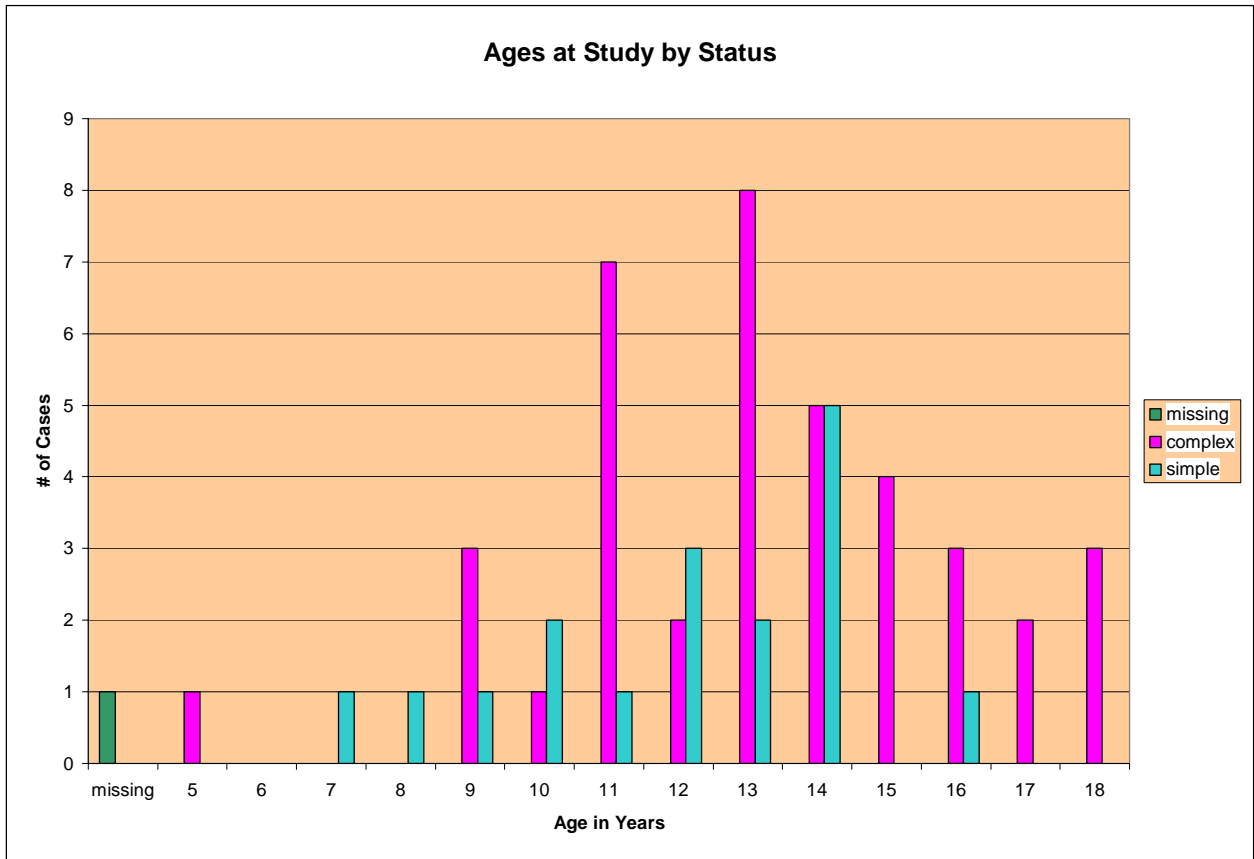


In 2002, the data collectors also were successful in meeting the intent of the study to enroll families with children and adolescents who had completed Juvenile Firesetting Intervention Programs. The range of ages of the young people interviewed was 6.10 years through 16.40 years. The SOS FIRES Family Study sample complied with the age range and distribution established for the study (i.e., ages 6 – 18). Like 2003, the distribution of cases followed a reasonably regular curve with the greatest concentration of cases at the ages of 12, 13, and 14 years.

Comparison of Youth Age to Status.

In 2003, the research team questioned whether the youths’ age had any relationship to their status as simple or complex. Chart 3 shows both types of firesetting children by age.

Chart 3. Comparison of Age to Status of Youth Participants in 2003.

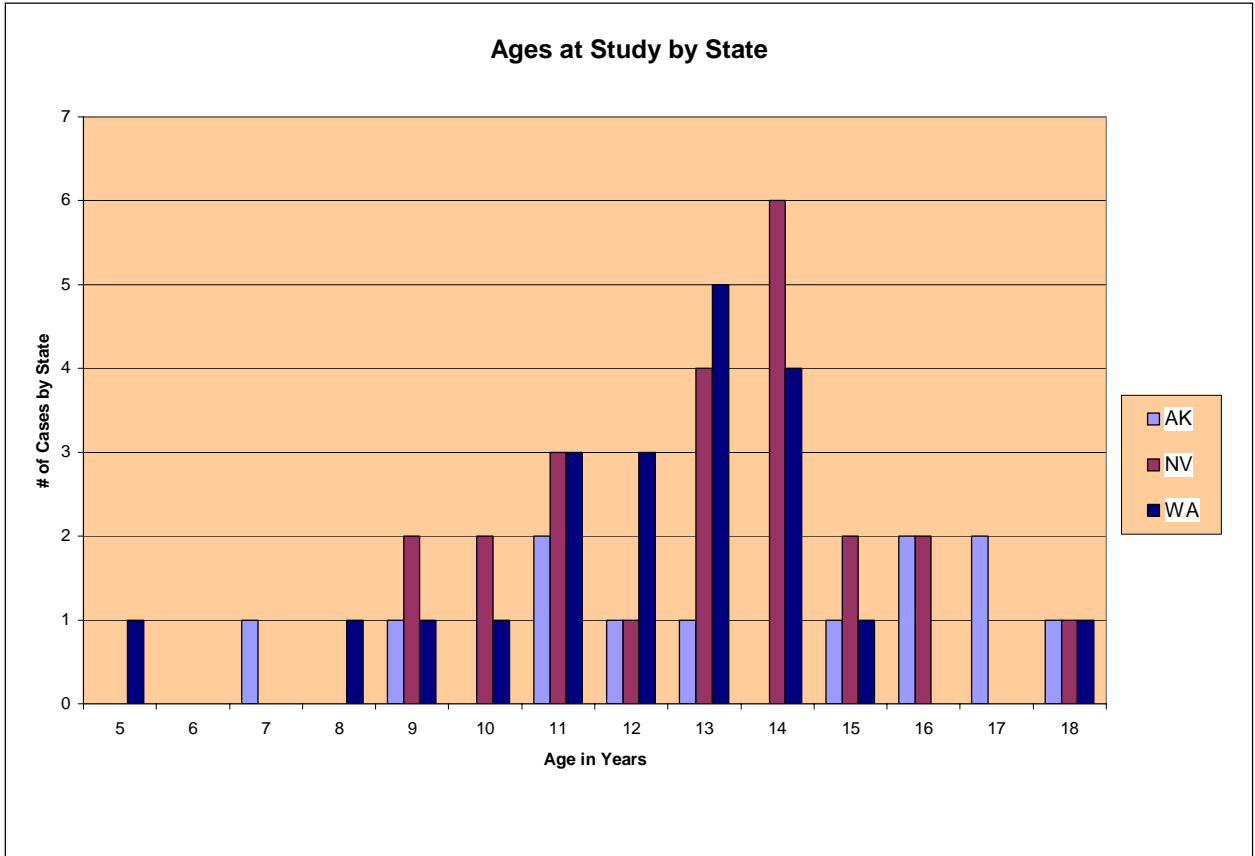


As Chart 3 demonstrates, although there was a greater distribution of ages for youth categorized as complex (5years-old old to 18), this group tended to be older than young people classified as simple. In fact, the average age of complex firesetting was 13.2 years of age while the average age of those labeled simple was only 11.9. The question regarding whether complex firesetting tended to be older than those categorized as simple did hold true for the 2003 study group.

Comparison of Youth Age by State.

The researchers were then curious to know whether the 2003 study group showed any age difference across states in which they were interviewed. This information is portrayed in Chart 4.

Chart 4. Comparison of Ages Across States of Youth Participants in 2003.

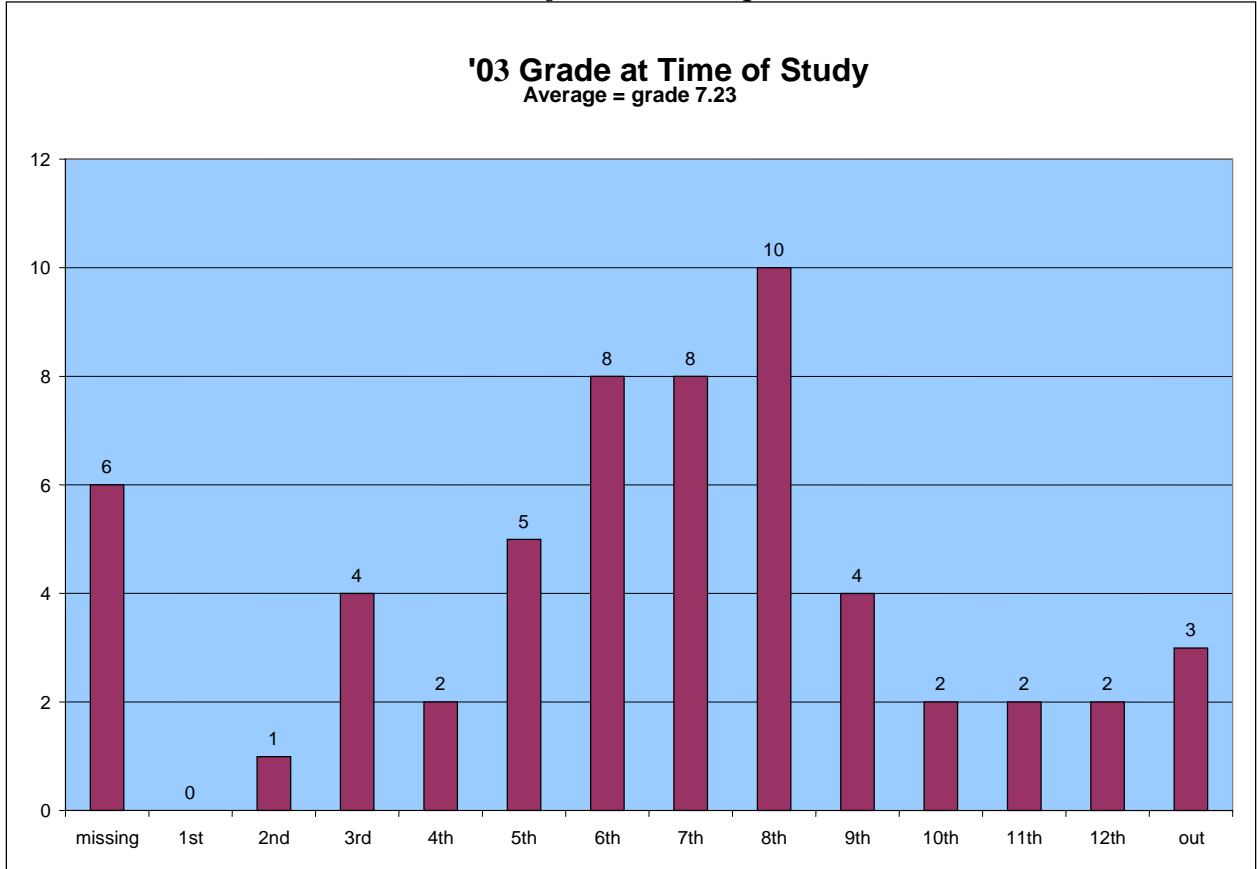


It is clear from Chart 4 that all three states involved in the 2003 study had similar distributions of participants. Although Washington and Alaska had the youngest interviewees, the averages were not statistically different. The average age for Alaska was 13.5 years of age, Nevada was 13.0 years, and Washington was 12.2 years-old. Although there was a difference between the average ages in Alaska and Washington, this was statistically influenced by the fact that Alaska had only 13 interviews while Washington had 21. It should be remembered that these numbers, broken out, are very small, and cannot be subjected to tests of statistical significance.

Grade Level of Youth in Study.

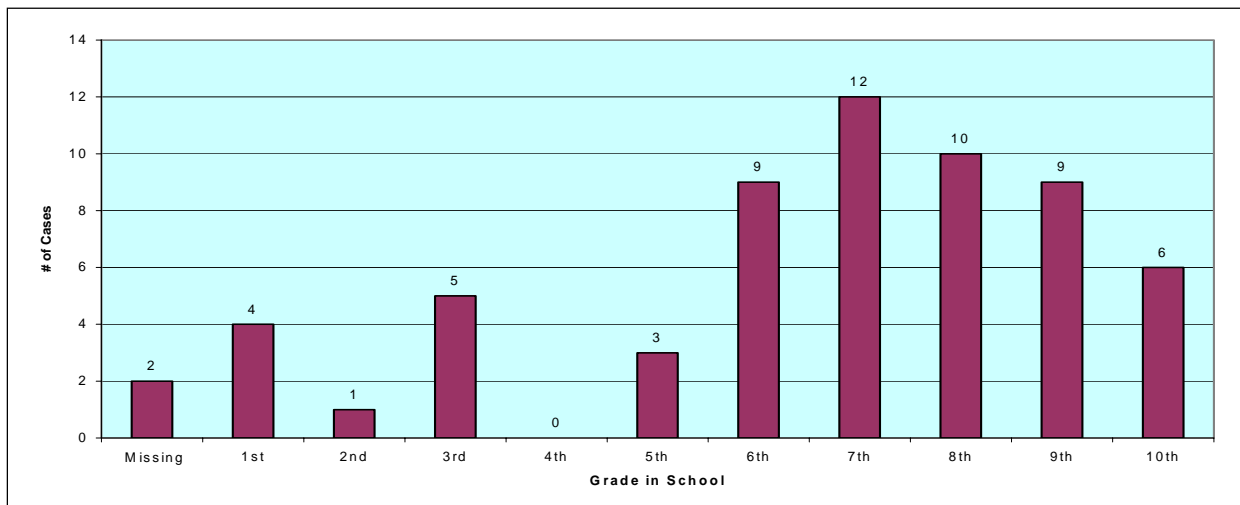
The research team was interested in the distribution of grade level for the young people who took part in the study. Chart 5 shows this information for the 2003 cohort.

Chart 5. Grade of Youth Participants in 2003.



Although three students had graduated, were in alternative school programs, or had otherwise aged out of school, the average grade level of the students involved in the study was 7.23. This is not surprising as grade follows age as shown in the earlier sections. Chart 6 shows the grade distribution for students in the 2002 group.

Chart 6. Grade of Youth Participants in 2002.

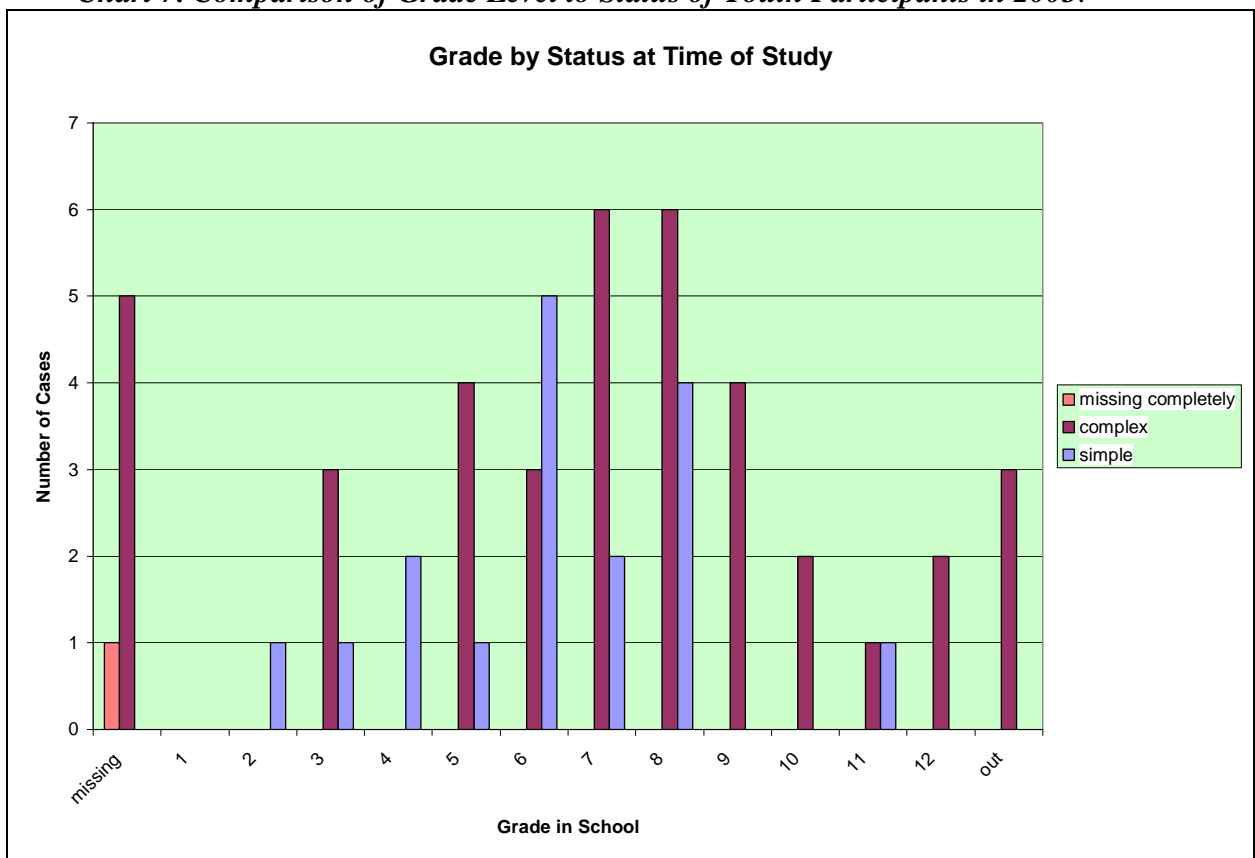


The range of grades in school represented in the 2002 study was 1st through 10th. The 2002 SOS FIRES Family Interview Study sample complied with the age and grade range and distribution established for the study by the research team which was elementary through high school. The average grade level for students enrolled in the study was grade 6.69.

Comparison of Grade at Time of Study to Status.

The variables of grade in school and status (i.e., simple or complex) at the time of the study interview were subjected to a cross-tabulation analysis to determine whether any relationship between these variables should be explored. These results for 2003 are shown in Chart 7.

Chart 7. Comparison of Grade Level to Status of Youth Participants in 2003.

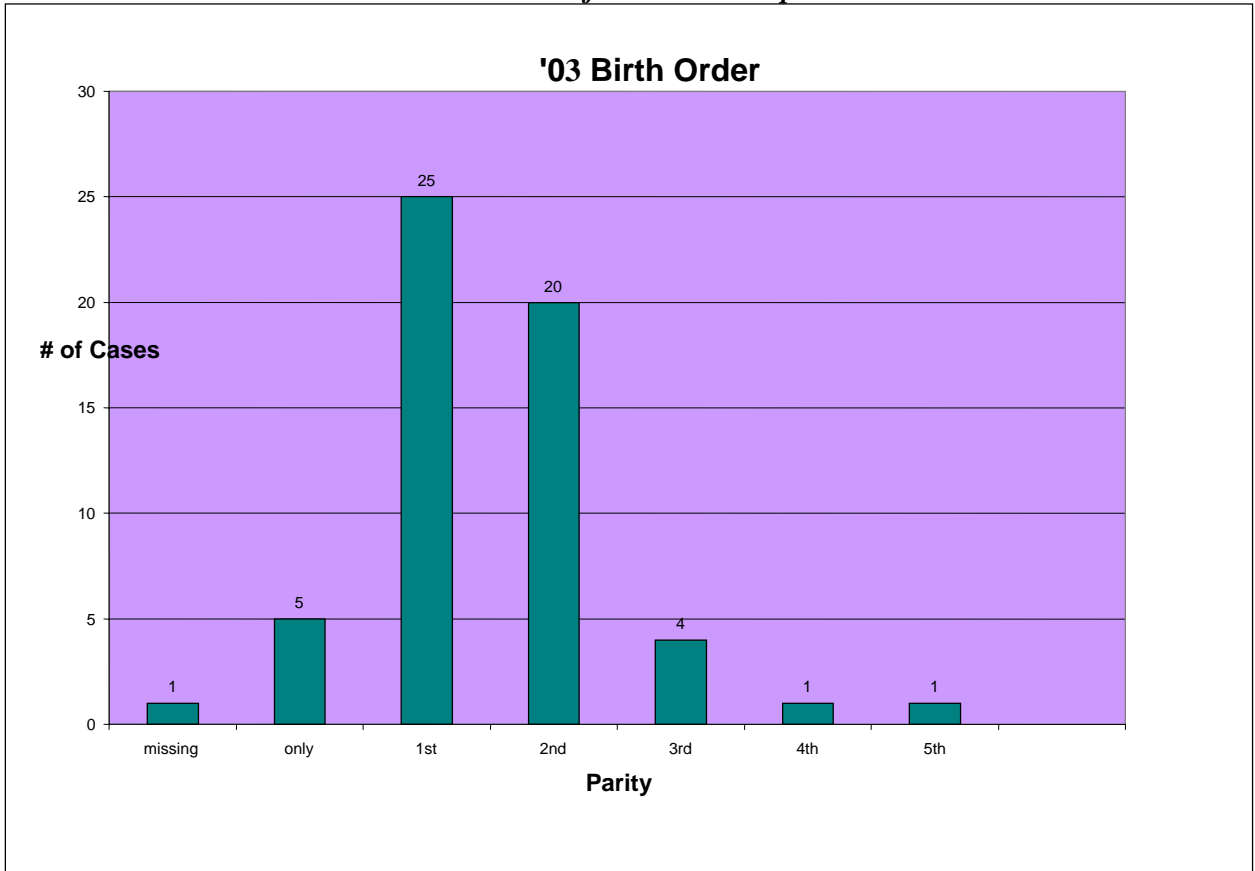


Like direct age of the participating youth, there was a difference between the average grade level of those young people labeled complex (average grade = 6.46) and those categorized as simple (average grade = 6.18). There was a smaller difference than that shown between direct ages. This would be expected because one grade encompasses more than one specific year of age. In addition, there were 6 missing values in this computation which would have influenced the outcome in an unknown direction.

Distribution of Birth Order.

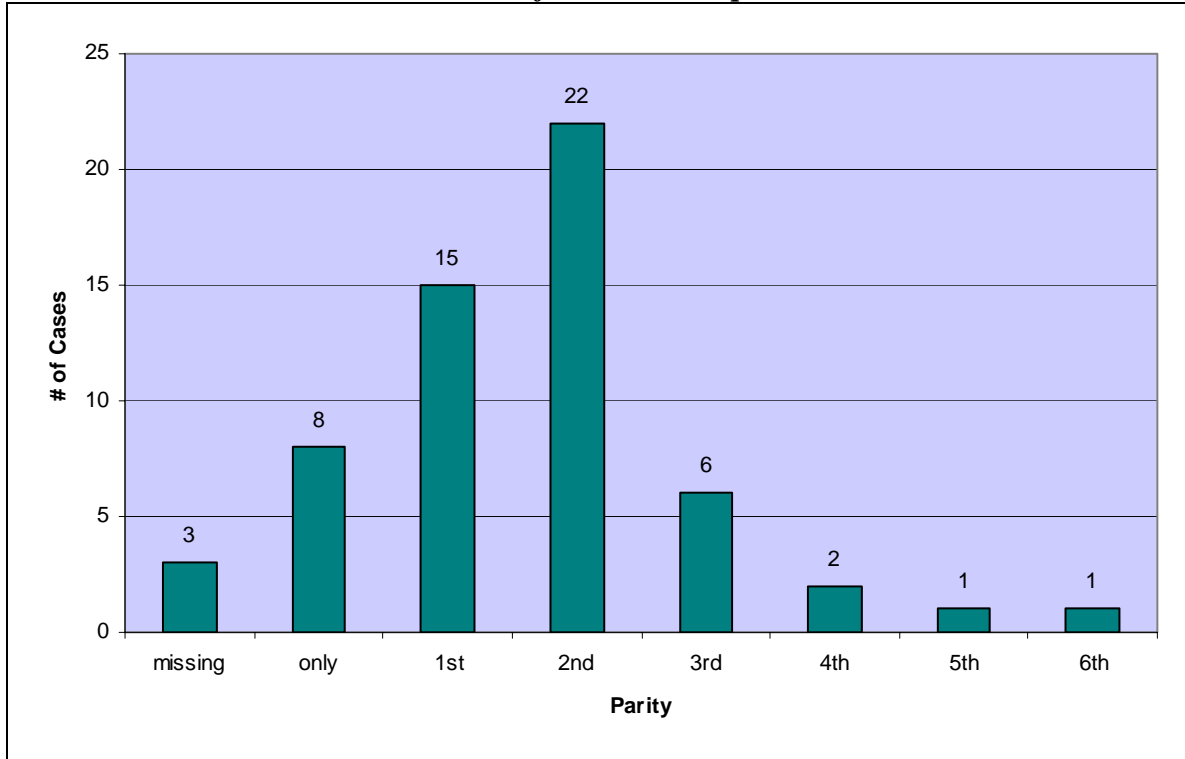
Another demographic variable analyzed was the birth order, or parity, of the children/adolescents enrolled in the study. Chart 8 shows the distribution of birth order for the youngsters interviewed during 2003.

Chart 8. Birth Order of Youth Participants in 2003.



The birth order of the 2003 cohort showed a marked distinction for first or second child. Of the youth enrolled in 2003, 44% were the first child in the family and 35% were the second child. This is somewhat different from the results of 2002 shown in Chart 9.

Chart 9. Birth Order of Youth Participants in 2002.



Unlike the distribution for 2003, in 2002 there appeared to be an unusual “spike” for second child in the birth order. It is critical to consider, however, that this sample (61 cases) was too small and informal to infer any relationship to firesetting behavior or to generalize to families of experiencing firesetting behaviors.

Comparison of Parity to Status.

In light of the results for birth order, a cross tabulation analysis was conducted for the variables of parity and status (simple vs. complex cases). As a result of this analysis, parity showed no relationship to the severity of status – i.e., birth order could not be used as a predictor of severity for either 2003 or 2002.

Analyses of Family Structure.

The next area of interest to the research team was basic family structure. This included all aspects of parent or guardian relationships to the children/adolescents involved in the Juvenile Firesetting Intervention Programs, the make-up of the primary families, and their interactions with social service systems.

Primary Guardians in the Families Studied.

It was of interest to the team to determine the relationships of both the primary female and male caregivers to the children and adolescents interviewed for the study. Regarding the women who were involved with the young people their status included:

Table 5. Major Female Relationships to Youth

Female Relationship	'02 Data Set = 61 cases	'03 Data Set = 57 cases
Mother	44 cases (72%)	46 cases (81%)
Adoptive mother	6 cases (10%)	3 cases (6%)
Grandmothers	4 cases (7%)	5 cases (9%)
No female in major household	4 cases (7%)	0 cases
Step-grandmother	1 case (2%)	0 cases
Ex-stepmother	1 case (2%)	0 cases
Guardian	0 cases	1 case (2%)
Aunt	0 cases	1 case (2%)

Of the male guardians enrolled in the study, their status included:

Table 6. Major Male Relationships to Youth

Male Relationship	'02 Data Set = 61 cases	'03 Data Set = 57 cases
Father	25 cases (41%)	20 cases (35%)
No male in major household	14 cases (23%)	18 cases (32%)
Stepfather	11 cases (18%)	12 cases (21%)
Adoptive father	4 cases (7%)	1 case (2%)
Boyfriend	1 case (2%)	4 cases (8%)
Partner	1 case (2%)	0 cases
Uncle	1 case (2%)	0 cases
Step-grandfather	0 cases	1 case (2%)
Missing value	4 cases (7%)	1 case (2%)

During both 2002 and 2003, the largest percent of children and youth were under the guardianship of their biological mothers with biological fathers second. It was necessary to complete further analyses to determine the extent of the interactions between these relationships and the behaviors of the children/adolescents.

Comparison of Primary Guardians to Status of the Firesetting.

To determine the importance of the young person's living arrangement with one or more biological parent, the variable (biological parent) was analyzed in relationship to the status (simple vs. complex) of the firesetting behavior. The results of that analysis showed that:

Table 7. Relationships of Parents/Guardians to Youth by Status

Marital Status of Birth Parents	Complex	Simple	Total
Adoptive/single	1 (2%)	0	1
Adoptive/married	1 (2%)	0	1
Biolog/divorced	5 (13%)	2 (12%)	7
Biolog/married	12 (31%)	6 (35%)	18
Biolog/single	10 (25%)	3 (18%)	13
Biolog/widow	0	2 (12%)	2
Divorced/remarried	8 (21%)	4 (24%)	12
Single	1 (2%)	0	1
Widow	1 (2%)	0	1
Missing value	0	0	1
	39	17	57

In 2003, the greatest percent of both complex (31%) and simple (35%) firesetting lived with their biological parents who were still married. Following that, the next greatest percent for complex youth (25%) is biological-single parents, while for the simple group (24%); it is divorced-remarried parents. From Table 7, it is apparent that the majority of both complex and simple youth were living with at least one biological parent for the 2003 study group.

For the 2002 youth who participated in the study,

- 32/36 (89%) “simple” cases lived with 1 or more biological parents.
- 16/24 (67%) “complex” cases lived with 1 or more biological parents.
- Of the 6 adoptive families in the study, 4 cases were “complex” and 2 were “simple.”
- Of the 4 grandmothers as primary guardian, 2 cases were “complex” and 2 were “simple.”

Comparison of Primary Guardians Relationships to Status of Firesetting.

It was of interest to the research team to find out whether there was an association between the status assigned the young person for the purpose of the study and their relationships with their major caregivers. Table 8 shows the relationship of the female parents.

Table 8. Female Relationships to Youth by Status for 2003

Marital Status	Complex	Simple	Total
Adoptive	1 (2.6%)	0	1
Aunt	1 (2.6%)	0	1
Grandmother	5 (13%)	0	5
Guardian	1 (2.6%)	0	1
Mother	31 (79.5%)	15 (88%)	46
Stepmother	0	2 (12%)	2
Missing value	0	0	1
	39	17	57

Male relationships are shown to the youth in 2003 in Table 9:

Table 9. Male Relationships to Youth by Status for 2003

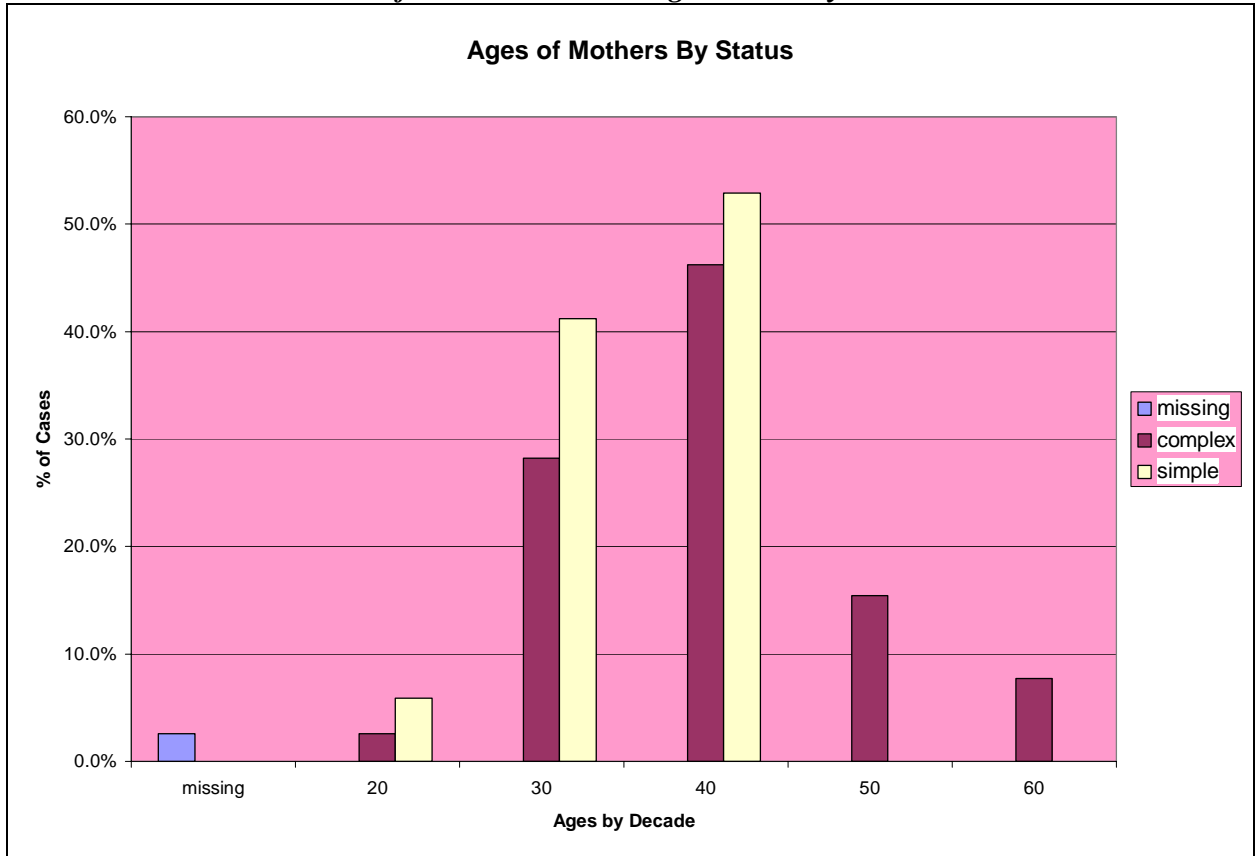
Marital Status	Complex	Simple	Total
Adoptive	1 (2.6%)	0	1
Boyfriend	2 (5.1%)	1 (5.9%)	3
Father	11 (28.2%)	9 (52.9%)	20
Fiancé	0	1 (5.9%)	1
No male	14 (35.9%)	4 (23.5%)	18
Step-father	10 (25.6)	2 (11.8%)	12
Step-grandfather	1 (2.6%)		1
Missing value	0	0	1
	39	17	57

Analyses of female and male relationships yielded predictors of status, i.e., severity of firesetting behavior, that are difficult to interpret in the 2003 cohort. By percent, simple firesetting behavior appears to have approximately 10% more primary relationships with their biological mothers. In addition, simple firesetting appear to have relationships with 25% more of their biological fathers than complex firesetting. As with other variables, caution must be taken in interpretation since there are so few cases in each cell of the tables. Statistical testing is inappropriate for this small sample.

Major female and male age compared to firesetting status.

The next family question examined was to determine whether the age of the mothers or fathers were related to the status assigned to the youth in the study. Chart 10 shows the age by percent of mothers in each age decade by status of the young people in the study. The reason that percents were used in each age decade is that raw numbers for simple and complex youth were so different. Using percents were more appropriate to show the mothers' age comparisons.

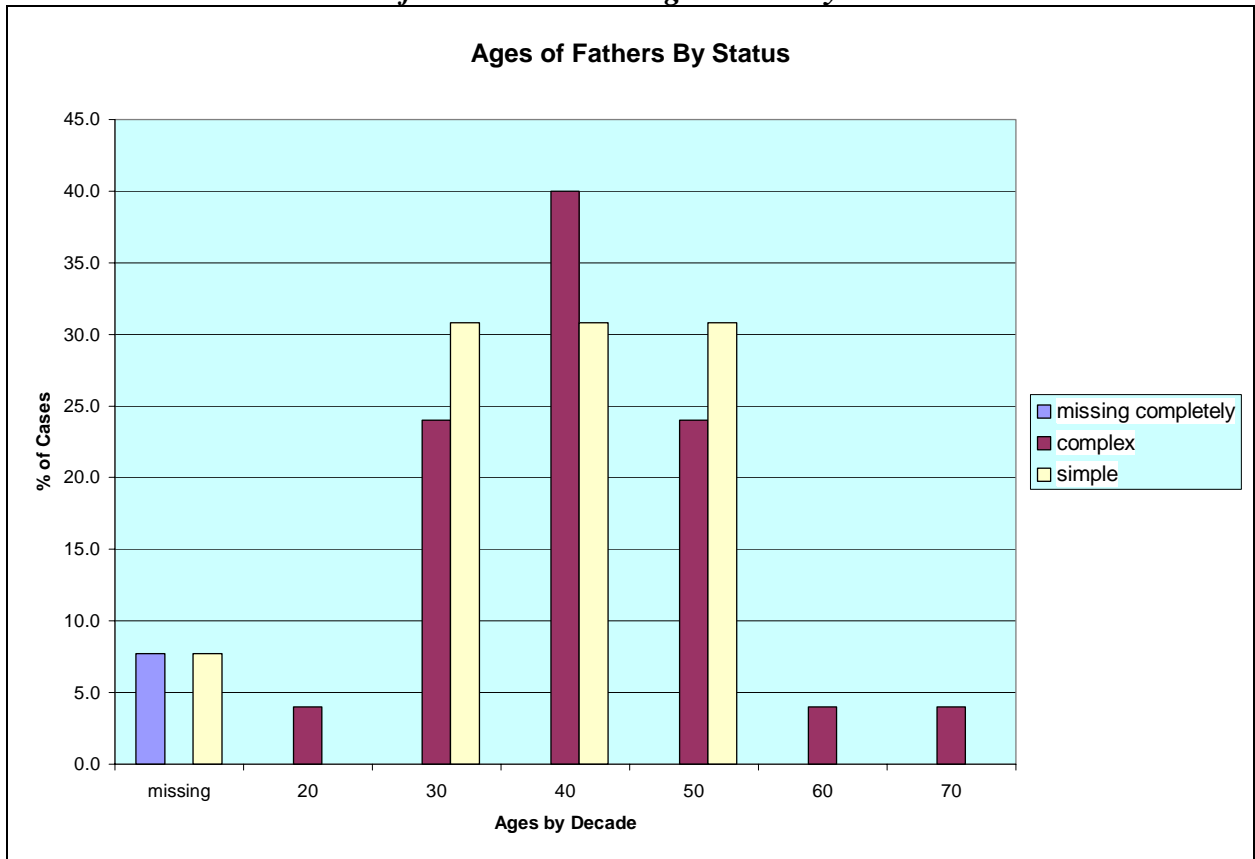
Chart 10. Percent of Mothers in Each Age Decade by Youth Status



From the data available for 2003, it appears that mothers of youth categorized as “simple” fall into a younger age range (20 to 40 years of age) than those of “complex” youth (20 to 60 years of age). As with the analyses above, one has to be cautious because of the small number of mothers in the 2003 sample.

The fathers' age (in percents by decade) compared to the status of the firesetting behaviors are shown in Chart 11.

Chart 11. Percent of Fathers in Each Age Decade by Youth Status



From Chart 11, fathers of youth categorized as “complex” in the 2003 cohort appear to have a broader range of age, from the 20’s to the 70’s. In contrast, the fathers of young people classified as “simple” firesetting ranged only from the 30’s to the 50’s. This may be a true reflection of the age differences among the fathers, or it may be an artifact of circumstance that the researchers had age information for only 13 fathers of “simple” firesetting in 2003. Small numbers must always be a consideration in all data interpretations.

Mother and Father Employment by Youth Status for 2003.

Equally of interest to the research team in 2003 was whether the major female and major male in the household were employed. Table 10 shows this relationship to the youths’ status for females.

Table 10. Females Employed Compared to Youth by Status for 2003

Female Employed	Complex	Simple	Total
No	10 (25.6%)	3 (17.6%)	13
Yes	29 (74.3%)	14 (82.3%)	43
Missing value	0	0	1
	39	17	57

Males employed compared to the status of the youth in 2003 in Table 11:

Table 11. Males Employed Compared to Youth by Status for 2003

Males Employed	Complex	Simple	Total
No	2 (5.1%)	1 (5.9%)	3
NA	14 (35.9%)	4 (23.5%)	18
Yes	23 (59.0%)	11 (64.7%)	34
Missing value	0	1 (5.9%)	2
	39	17	57

Given the small numbers discussed above, it would appear that a greater percent of both males and females related to simple firesetting are employed than those in households of complex firesetting. If this were true, it would be antithetical to the theory that simple firesetting has more primary caregivers in the home for supervision. This will be examined later in the paper in the analysis of the question directly related to supervision after school and during free periods.

Female and Male Education Level Compared to Youth by Status for 2003

The team was also interested in the relationship between the educational level of the major males and females in the households and the firesetting status of the youth. Table 12 shows those results for females:

Table 12. Education Level of Major Female Compared to Youth Status for 2003

Female Highest Grade Completed	Complex	Simple	Total
8 th grade	0	1 (5.9%)	1
Some high school	5 (12.8%)	0	5
High school Grad	11 (28.2%)	6 (35.3%)	17
Some college or AA	18 (46.1%)	7 (41.2%)	25
Bachelors degree	5 (12.8%)	0	5
Graduate degree	0	3 (17.6%)	3
Missing value	0	0	1
	39	17	57

Very little can be concluded from this analysis of female education levels. More parents of complex firesetting had completed bachelor's degrees; however more mothers of simple firesetting had completed graduate degrees. Male education levels compared to youth status are shown in Table 13:

Table 13. Education Level of Major Male Compared to Youth Status for 2003

Male Highest Grade Completed	Complex	Simple	Total
8 th grade	0	0	0
Some high school	2 (8.0%)	0	2
High school Grad	4 (16.0%)	2 (15.4%)	6
Some college or AA	10 (40.0%)	9 (69.2%)	19
Bachelors degree	7 (28.0%)	1 (7.7%)	8
Graduate degree	1 (4.0%)	0	1
Missing value	1 (4.0%)	1 (7.7%)	3
	25	13	39

The numbers available for males in the household were even smaller than females because a significant number of households had no major male (See Table 6). From Table 13, it would appear that more fathers of complex firesetting had bachelors or graduate degrees; however, this may simply be related to the fact that there were twice as many male parents of complex youth in this sample. More work is needed before a definite conclusion can be made.

Social Services prior to intake.

Analyses were completed to determine the relationships between the status of firesetting behavior and the types of social services families were receiving prior to intake into the Juvenile Firesetting Programs. Results for 2003 showed:

Table 14. Services Received Compared to Youth Status for 2003

Services Received Prior to Firesetting	Complex	Simple	Total
MD or mental health	13 (34.0%)	4 (25%)	17
Juvenile Justice	5 (13.0%)	3 (18.8%)	8
Fire Dept. or Investig.	4 (10.5%)	2 (12.5%)	6
Multiple Services	6 (15.8%)	2 (12.5%)	8
Missing value	1 (2.6%)	1 (6.3%)	3

In the 2003 cohort, at least 1/3 of the young people labeled complex and 1/4 of those categorized as simple had received services from a doctor or mental health service before their first visit to the Juvenile Firesetting Intervention Program. In the 2002 study sample,

- 21/24 (88%) “complex” cases were involved with a counselor, MD or psychiatrist prior to the initial screening.
- 5/36 (14%) “simple” cases were involved with a counselor, MD or psychiatrist prior to intake.

As might be expected, “complex” cases had been involved in significantly more pre-screening experiences with counselors, family doctors, and/or psychiatrists than had the “simple” cases. As in previous sections, however, it must be noted that too few cases were enrolled in this study to generalize to all firesetting of the populations of any of the states involved. This is demonstrated by the differences between the 2002 and 2003 cohorts.

Nevertheless, the large percent of youth involved in services has implications for all Juvenile Firesetting Intervention Programs. It is important to recognize that many of these youth are *not* new clients to mental health, juvenile justice, and or fire investigation.

Acting alone or with friends to set fires.

The research team was interested to learn about the supervision patterns of families related to juvenile firesetting behavior. One question relevant to that variable was whether the young reported acting alone or with friends when they set fires. According to the children’s and adolescent’s self-reports, verified by Fire Department reports in 2003:

- 9/38 (24%) “complex” cases reported that they acted alone when they set the fire that initiated the referral to a Juvenile Firesetting Program.
- 4/17 (24%) “simple” cases reported that they acted alone.

In 2003, the percent of young people who reported acting alone was the same for complex and simple firesetting. For 2002,

- 8/24 (33%) “complex” cases reported that they acted alone when they set the fire that initiated the referral to a Juvenile Firesetting Program.
- 4/36 (11%) “simple” cases reported that they acted alone.

From the analysis in 2002, it appears that three times as many “complex” cases acted alone when setting the fire of record than did “simple” cases. Although these results are preliminary, and cannot be generalized beyond this population, further study of this research question is merited.

Caregivers during free time related to status for 2003.

During the second year of research, the team asked specifically who was responsible for the child or adolescent during their free time (e.g., after school). The results are shown in Table 15.

Table 15. Caregiver During Free Time Compared to Youth Status for 2003

Caregiver	Complex	Simple	Total
Self	9 (23.1%)	3 (17.6%)	12
Parent or Stepparent	22 (56.4%)	14 (82.4%)	36
Grandparent	4 (10.2%)	0	4
Sibling	2 (5.1%)	0	2
Babysitter	1 (2.6%)	0	1
Cousin	1 (2.6%)	0	1
Missing value	0	0	1
	39	17	57

The greatest difference apparent in Table 15 is that 26% more parents or stepparents supervise youngsters categorized as simple as parents of youth classified as complex. In reverse more complex youth are responsible for themselves (5.5% more) than those young people in the simple category. As with all analyses, caution must be noted because of the small number of subjects.

Access to Ignition Devices Compared to Status of Youth for 2003

Related to the supervision issue, the 2003 research team was interested in the access to ignition devices young people had when they entered the Juvenile Firesetting Intervention Programs. In answer to the question, “Did the child or adolescent have access to ignition devices?” the interviewers discovered that:

- For complex firesetting, only 1 said they did not have access to ignition devices. 37 said “yes”, they did have access.
- For simple firesetting, only 2 said they did not have access to ignition devices. 15 said “yes”, they did have access.

For both groups of young people, it seems safe to conclude that they *did* have access to ignition devices when they set the fires that predicated the referral to a Juvenile Firesetting Intervention Program.

Likelihood that Youth would Continue Setting Fires Compared to Status for 2003

Young people were asked during their original intake interviews whether they thought they would continue to set fires. For the 2003 cohort, only 5 of the 57 youth answered “Yes, they would continue to set fires.” Of these, all 5 were in the group classified as complex. No simple firesetting children said they would set another fire. More study is necessary, but this result certainly merits further study.

Pregnancy Complications Related to Severity of Status.

Another feature of family status of interest to the research team was factors surrounding pregnancy and birth. Much information has come to light in recent years regarding the consequences of birth complications, so several questions were asked of all parents/guardians interviewed. For 2003, the families reporting complications during the pregnancy included:

- In 17/38 (45%) “complex” cases, the mother or guardian reported having complications during the pregnancy.
- In 6/17 (36%) “simple” cases, the mother or guardian reported having complications during the pregnancy.

For 2002, the mothers/guardians reporting complications included:

- In 16/21 (76%) “complex” cases, the mother or guardian reported having complications during the pregnancy.
- In 16/33 (49%) “simple” cases, the mother or guardian reported having complications during the pregnancy.

It is difficult to explain the large difference in birth complications between the study samples for 2002 and 2003. It is possible that the small cohorts made the groups appear extremely different.

Included among the birth complications for 2002 and 2003 were:

- In 2003, 8/56 (14%) of the births were premature.
- In 2002, 12/49 (25%) reported that the babies were premature.

These are larger than the 12% premature births that occur in the normal population (Kessenich, 2003). However, the 2003 data were not much greater than the occurrence in the normal population, so this question should continue to be explored.

Figures for “complications during delivery” were very close to those for pregnancy complications for both status groups (simple and complex) of youth. Delivery complications included:

Birth Difference	2002 # Cases	2003 # Cases
Anoxia/”blue baby” syndrome	5 cases	4 cases
C-section delivery w/ complic.	7 cases	5 cases
Induced labor	2 cases	3 cases
Low birth weight	3 cases	0
Inhalation of fluid or meconium	2 cases	1 case
Vacuum delivery	1 case	0
Preeclampsia	0	3 cases
Cord around neck	0	5 cases
Forceps delivery	0	1 case

Interpretation of these analyses reveals that more “complex” cases experienced complications during pregnancy than did “simple” cases. However, significantly more cases from both groups experienced complications during pregnancy than expected in the general public.

Maternal use of prescription medications during pregnancy.

Given the developing body of literature showing significant cognitive and behavioral deficits experienced by children and adolescents whose mothers drank substantial quantities of alcohol or used prescription or recreational drugs during pregnancy (Burgess, 1999; Streissguth, 1998), the research team was curious to discover the number of young people enrolled in the SOS study during 2002 and 2003 whose birth mothers had used any of the substances during pregnancy. Results revealed that:

For 2003,

- In 10/39 (26%) “complex” cases, the mother reported having taken prescription (potentially teratogenic, meaning causes birth defects) medications during the pregnancy.

- In 2/17 (12%) “simple” cases, the mother reported having taken prescription medications during the pregnancy.

For the 2002 cohort,

- In 11/19 (58%) “complex” cases, the mother reported having taken prescription medications during the pregnancy.
- In 12/31 (39%) “simple” cases, the mother reported having taken prescription medications.

In the general population, approximately 4% of the mothers delivering children at urban hospitals would be expected to report having used prescription medications during pregnancy. In contrast, more mothers during both years had used prescription medications than the general public. Although the numbers for 2002 were much larger, mothers of young people considered “complex” cases reported maternal use of prescription medications during pregnancy at least 1½ times more than did mothers of youth categorized as “simple” cases. Although the number of families is small, this is an area that definitely indicates a need for further inquiry.

Paternal use of prescription meds during pregnancy.

Because of the high rate of prenatal, maternal prescription medication use, the research team was interested in comparative rates for biological fathers where that information was available.

For 2003, the data showed:

- In 4/30 (13%) “complex” cases, the father reported having taken prescription medications before or during the pregnancy.
- In 1/17 (6%) “simple” cases, the father reported having taken prescription medications before or during the pregnancy

For 2002, the families said:

- In 15/19 (26%) “complex” cases, the father reported having taken prescription medications before or during the pregnancy.
- In 1/17 (6%) “simple” cases, the father reported having taken prescription medications before or during the pregnancy

The Research Director found that there were significantly more missing values for biological fathers than for biological mothers, both years, so comparisons between the two groups are statistically meaningless. However, within the group of biological fathers who did report using medications, significantly more “complex” cases reported paternal use of prescription medications before or during pregnancy than did “simple” cases both in 2002 and in 2003. In 2002, the percent of fathers of complex firesetting who took medications (26%) was twice as large as the same group in 2003 (13%). As with all other analyses, the total number of families was small, so these results must be explored in further studies to be fully explained.

Maternal and paternal current smoking.

In 2003, the interviewers specifically asked about the number and identity of people who smoked in the homes where the young people live. The results for the parents in the homes compared to the status of the children and adolescents are shown in Tables 16 and 17.

Table 17. Maternal Smoking Compared to Youth Status for 2003

Female Smoking Status	Complex	Simple	Total
No	24 (61.5%)	12 (70.5%)	36
Yes	15 (38.5%)	5 (29.5%)	20
Missing value	0	0	1
	39	17	57

Table 18. Paternal Smoking Compared to Youth Status for 2003

Male Smoking Status	Complex	Simple	Total
No	16 (41.2%)	7 (41.2%)	23
No Male	14 (35.8%)	4 (23.5%)	18
Yes	9 (23.0%)	6 (35.3%)	15
Missing value	0	0	1
	39	17	57

Comparisons are difficult to make for this variable. Approximately 9% more mothers of complex firesetting smoke than mothers of simple firesetting. About 12% more fathers of *simple* firesetting said that they smoked than fathers of complex youth; however there are a large number of households without a significant male figure. This fact makes it even more difficult to interpret the data for fathers than for mothers.

2003 Cigarettes used per day by female and male guardians during pregnancy.

In contrast to current smoking, parents/guardians were asked how many cigarettes the mother and father had used before and during the pregnancy. Results for 2003 showed that for biological mothers:

- In 15/34 (44%) “complex” cases, the mother reported having used *more than 10 and up to 20 cigarettes* before or during the pregnancy.
- In 5/15 (33%) “simple” cases, the mother reported having used between *2 and 10 cigarettes/day* before or during the pregnancy.
- Missing values = 7 cases.

For fathers in 2003:

- In 24/33 (73%) “complex” cases, the father reported having used *between 5 and up to 40 cigarettes* before or during the pregnancy.
- In 7/15 (47%) “simple” cases, the mother reported having used *between 2 and 20 cigarettes/day* before or during the pregnancy.
- Missing values = 8 cases.

The parents of complex firesetting exceeded those of simple firesetting in both number of cigarettes smoked/day and the percent of mothers and father who reported having used cigarettes. For 2003, mother of the complex group used up to 20 cigarettes/day, and fathers used up to 40 cigarettes/day. This area should be included in further studies, both in terms of the amount of tobacco used and the relative percent of parents who report having smoked. In addition, Juvenile Firesetting Intervention Programs that inquire about current smoking might consider ask about the number of cigarettes used.

Maternal use of “recreational” drugs during pregnancy.

Given the use of prescription medications and legal nicotine by mothers of both simple and complex firesetting, researchers were interested to know whether these trends held for recreational (i.e., illegal drugs) as well.

For 2003,

- In 11/37 (30%) “complex” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- In 3/17 (18%) “simple” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- Missing values = 3 cases.

For 2002,

- In 10/22 (45%) “complex” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- In 4/34 (12%) “simple” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- Missing values = 4 cases.

Interestingly, values were missing for only three mothers in 2003 and four mothers in 2002, on this variable. Either the biological parents did the actual interviews, or the interviewer spoke with a grandparent or other relative familiar with the child’s prenatal history. Only in a few cases of adoption, particularly international adoption, the adoptive parents did not have access to the birth mother’s medical records.

Of the cases for which information was available, more “complex” cases reported maternal use of recreational drugs during pregnancy than did “simple” cases for both years of the SOS study. For both years, significantly more cases from the “complex” and “simple” groups reported maternal use of recreational drugs during pregnancy than expected in the general public (4-5% in a Seattle study of suburban hospital deliveries,

Streissguth, 1998). This could have severe repercussions for the offspring of those women, so it should continue to be investigated.

Of the types of drugs used there was a range. The illegal drugs included marijuana, cocaine, heroin, methamphetamines, and “speed.” Three women, or their families, reported multiple illegal drug use during pregnancy. All three of the children of these women were categorized in the complex group.

Paternal use of “recreational” drugs before or during pregnancy.

As with the prescription medications, the trend of paternal consumption of recreational drugs was also of interest to the research team.

For the 2003 study,

- In 16/33 (49%) “complex” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- In 5/17 (29%) “simple” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- Missing values = 7 cases.

For 2002, the data showed,

- In 11/20 (55%) “complex” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- In 8/32 (25%) “simple” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- Missing values = 8 cases.

Twice as many paternal cases had missing values for this variable as maternal cases for both years of the study. For those families that did report paternal information, 20% more fathers of complex youth affirmed taking drugs than fathers of simple firesetting in 2003. In 2002, more than twice as many “complex” cases (55%) reported paternal use of recreational drugs before or during pregnancy than did “simple” cases (25%). This area definitely merits further investigation.

Maternal use of alcohol during pregnancy.

Since the most is known about the physical, cognitive, and behavioral sequelae of prenatal consumption of alcohol, the research team was most interested in the patterns of maternal drinking before birth.

For the 2003 study,

- In 4/36 (11%) “complex” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- In 1/15 (7%) “simple” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- Missing values = 5 cases.

For the 2002 year,

- In 6/19 (32%) “complex” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- In 2/30 (7%) “simple” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- Missing values = 11 cases.

Interpretation of these analyses shows 5 cases in 2003 and 11 cases in 2002 where information was missing from the mother’s prenatal history. For those cases where information was available, “complex” cases reported maternal use of alcohol during pregnancy more often than did “simple” cases. In 2002, the percent for complex cases was 4½ times that for simple cases. The difference between the years cannot be explained; however, this is an area of interest for follow-up study. Scientists know that consumption of 5 to 35 drinks/week during pregnancy is reported in only approximately 4% of the general population after many years of study (Streissguth, 1998).

Paternal use of alcohol during pregnancy.

In comparable questions for paternal consumption of alcohol before conception and birth, the surprising result was the upper limit of alcohol consumption. Unlike the commonly reported upper limit of 35 drinks per week (5 drinks per day -- 7 days per week). In this study the upper limit reported was 84 drinks per week (12 drinks per day -- 7 days per week) in both 2002 and 2003. For 2003, the data showed that

- In 17/30 (57%) “complex” cases, the father reported having had between 5 and 84 drinks/week during the pregnancy.
- In this same group, 3/30 (10%) reported drinking between 35 and 84 drinks/week before or during the pregnancy.
- In 8/16 (50%) “simple” cases, the father reported having had between 5 and 35 drinks/week during the pregnancy.
- Missing values = 10.

For 2002,

- In 11/20 (55%) “complex” cases, the father reported having had between 5 and 84 drinks/week during the pregnancy.
- In this same group, 5/20 (25%) reported drinking between 35 and 84 drinks/week before or during the pregnancy.
- In 9/29 (31%) “simple” cases, the father reported having had between 5 and 84 drinks/week during the pregnancy.
- Missing values = 11.

The missing values for the fathers who drank during pregnancy were similar across the two years of the study. For the fathers who did give information about consumption during pregnancy, more “complex” cases reported paternal use of alcohol before and during pregnancy than did “simple” cases. What is interesting for further study is the

effect of paternal drinking on their offspring since such a high percent of fathers of both simple and complex firesetting were reported to have been drinking before or during the pregnancy and birth.

Analyses of Child Diagnoses and Medication.

The final area of analysis requested by the research team were characteristics of the children or adolescents who had set one or more fires and then participated in a Juvenile Firesetting Program in one of the four states in the study. The following sections describe some of the major findings related to the youth.

Frequency of major diagnoses.

One characteristic of interest was to determine whether the children and adolescents interviewed for the SOS FIRES Study had been diagnosed by a medical doctor (M.D.) or psychologist (Ph.D.) with any major medial or psychological conditions. The results showed that ADD/ADHD was the most common diagnosis.

In 2003:

- For “Complex” cases, 17/39 (44%) had attention deficit disorder (ADD) or attention deficit disorder with hyperactivity (ADHD).
- For “Simple” cases, 3/17 (18%) had ADD or ADHD.

In 2002:

- For “Complex” cases, 17/24 (71%) had ADD or ADHD.
- For “Simple” cases, 6/31 (20%) had ADD or ADHD.

The percent of children with ADD or ADHD is extremely high among both simple and complex groups for both the 2002 and 2003 study years. This is in contrast to 3-5% that would be expected among the school-aged population (Cleveland Clinic, 2003).

Neurological and psychological diagnoses reported across cases for the two study years included:

Table 19. Diagnoses by Number of Cases Per Year

Diagnosis	2002	2003
ADD/ADHD	23 cases	20 cases
FAS/FAE	4	1
Oppositional defiant disorder (ODD)	7	4
Post traumatic stress disorder (PTSD)	4	0
Anoxia at birth	5	4
Asthma	6	7
Attachment disorders	2	0
Learning disabilities/dyslexia	4	0
Traumatic brain injury	0	5
Depression	0	4
Bipolar disorder	0	2
Asperger's syndrome	0	2

Other diagnoses reported by parents, included fetal distress, anxiety, physical abuse, sexual abuse, drug abuse, suicidal ideology, run-away behavior, and self-mutilation. The prevalence of neurological diagnoses was estimated by interviews at the time of intake into the Juvenile Firesetting Intervention Program for the 2002 study. For the 2003 study, a question was specifically asked of the families related to any diagnoses the youth had been given by an MD or psychiatrist.

In 2003, 62% of the total study cohort had a diagnosis of ADD or ADHD. In 2002, at least 91% of the participants had ADD/ADHD. Over 2/3 of the cohort in 2003 and almost 98% of the cases in 2002 had one or more neurological diagnoses by the time of the study interview. Significantly more cases from both “simple” and “complex” groups had neurological diagnoses than expected for youth of comparable age. This are should be explored for both for further study and for inclusion in the questionnaires of Juvenile Firesetting Intervention Programs.

Parent reports of medication.

In 2002, many parents/guardians volunteered information regarding some children’s medications for their current medical and/or psychological conditions without the interviewers asking a specific question. In 2003, questions regarding medications taken, the dosages, who had prescribed those medications and how well the child adhered to the drug protocol, were added to the study interview. The results showed:

Table 20. Medications by Number of Cases Per Year

Medication	2002	2003
Adderall	2	4
Anticonvulsants/mood stabilizers	3	See others
Asthma	6	2
Clonidine	0	1
Concerta	3	5
Coreg	0	1
Dexedrine	3	0
Lithium	0	1
Prozac	0	2
Resperdal	0	2
Ritalin	4	3
Stratera	0	2
Tegretol	0	1
Trazadone	0	1
Trileptal	0	1
Wellbutrin	0	2
Zoloft	0	3

In 2003, of the total number of youth in the study reported to be taking medication:

- 46% of “complex” cases were reportedly on medication.
- 11% of “simple” cases were reportedly on medication.

In 2002,

- 64% of “complex” cases were reportedly on medication.
- 35% of “simple” cases were reportedly on medication.

The unsolicited reports of children’s and adolescent’s medication in 2002, revealed that a disproportionately high percentage of youth were taking medication for medical and/or psychological conditions. When asked about medication in 2003, a lower percentage of families reported medication use for both complex and simple firesetting. However, the high prescription rate of medications is significant in that the firesetting behavior was not the first, nor only, indication that many of the young people in the study suffered neurological or behavioral conditions with potentially serious consequences.

It is important that follow-up continue for conditions such as childhood asthma which had a disproportionately high number of cases in both years of the study. The reason asthma is of concern is that it is frequently treated with steroids, which makes many children overly active, difficult to deal with, and interferes with their attention. The relationship between these situations and a risk of firesetting should be explored.

Behavior problems in school.

The research team was curious to learn how early, and how recently, in the firesetting lives, parents or guardians had suspected their children might be experiencing behavior problems. When asked, parents and guardians revealed the following numbers of school reports of behavior problems.

Kindergarten Problems	2002	2003
“Complex” cases	14/22 (64%)	11/37 (30%)
“Simple” cases	18/32 (56%)	4/17 (24%)

In the “past two years of school,” the following numbers of parents were receiving school reports of behavior problems.

School Behavior Problems	2002	2003
“Complex” cases	23/24 (96%)	34/38 (90%)
“Simple” cases	30/35 (86%)	10/17 (59%)

It seems clear from the two analyses above that children/youth engaged in firesetting have a broader spectrum of problem behaviors than just fires. By kindergarten, over ½ the parents in each category in 2002, and over ¼ in 2003 were told that their children were experiencing problems in school. In the past two years of school, across age groups nearly all of the parents/guardians of complex cases in both years of the study were told their children were having behavior problems. Clearly this information must be pursued, and made available to interventionists in all fields of pediatric social services if it holds true for a larger sample of young people.

Analysis of Child/Youth Pain Tolerance.

Children prenatally exposed to alcohol and other drugs often experience a high threshold for pain (Streissguth, 1998). Because the research team suspected and confirmed prenatal use of alcohol and drugs by many biological parents, the question was included to determine how many firesetting youth might feel a higher than average tolerance for pain. Both parents and children/adolescents were asked the question, and to be counted as positive, both had to answer that the young person showed a, “Higher tolerance for pain than most of his/her friends.”

Results of this analysis for 2003 showed:

- Reporting high pain tolerance by the parent and child/adolescent:
 - “Complex” cases = 20/39 (51%)
 - “Simple” cases = 4/15 (27%)

Data for 2002 showed:

- Reporting high pain tolerance by the parent and child/adolescent:
 - “Complex” cases = 17/24 (71%)
 - “Simple” cases = 29/35 (57%)

As with other data from the study, it is difficult to generalize beyond the small sample for either year, or the two year show very different results. However, it would be interesting to explore exactly how the report of high pain tolerance is related to maternal prenatal exposure to alcohol and paternal exposure to alcohol. In addition, scientists should explore the exact relationship between pain tolerance, the other reported neurological disorders observed in this study, and young people's tendency toward high-risk behaviors...

Child/Youth Reports of "Bullying."

Also related to their clinical and intervention experiences, the research team was anxious to discover whether juvenile firesetting youth were either the victims of bullies at some time in their lives, or acted as bullies toward others. Both parents/guardians and youth were asked these questions. By comparing the quantitative and qualitative data, it was found that the youth's answers tended to be more credible because they could provide examples of the behaviors in question. Both sets (qualitative and quantitative) of youth answers are reported below.

In 2003,

- The following number of children/youth reported "being the victim of bullying" and provided examples.
 - "Complex" cases = 31/39 (80%)
 - "Simple" cases = 13/17 (77%)
- The following number of children/youth reported "acting as a bully toward others" and provided examples.
 - "Complex" cases = 19/39 (49%)
 - "Simple" cases = 7/17 (41%)

In a related question that emerged from the 2002 study, in 2003, parents/guardians were asked whether the child or adolescent had ever acted as a "Bully toward a Parent." The results of that item were:

- "Complex" cases = 9/39 (23%)
- "Simple" cases = 2/17 (12%)

The finding that appears to be most meaningful when exploring the issue of whether the child or adolescent had ever acted as a "bully toward a parent, is that more than twice the percent of complex firesetting had displayed this behavior as simple firesetting. Following are the data regarding bullying for 2002. For that year:

- The following number of children/youth reported "being the victim of bullying" and provided examples.
 - "Complex" cases = 21/23 (91%)
 - "Simple" cases = 22/35 (63%)

- The following number of children/youth reported “acting as a bully toward others” and provided examples.
 - “Complex” cases = 19/23 (83%)
 - “Simple” cases = 19/34 (56%)

From the qualitative analysis, the Research Director was able to determine that some parents/guardians reported that the child or adolescent had been “Acting as a Bully Toward a Parent,” even though this question was not asked directly in the study interview. The results of that item in 2002 were:

- The following numbers of children/youth were reported as “acting as a bully toward a parent or guardian.”
 - “Complex” cases = 4/24 (17%)
 - “Simple” cases = 2/35 (6%)

Related to the issue of bullying in 2002, extraordinarily high numbers of complex cases were both “victims of bullies” (91%) and had “acted as a bully toward others” (83%). Over half of the simple cases also experience both these situations. It would seem, even with the small number of cases in the current study, that more work is indicated to discover what sort of interaction “bullying” has with the high percent of behavior problems reported among juvenile firesetting and the firesetting behavior, itself. In addition, both years revealed that many more complex firesetting behaviors appear to bully adults than do simple firesetting. This would seem to be a question of interest both for researchers and for Interventionists who administer Juvenile Firesetting Programs.

Limitations of the Current Study

The number families involved in the present study (118) and the qualitative nature of the data collected during the in depth interviews had both advantages and disadvantages. It allowed the research team to begin to probe question never asked of the population of juvenile firesetting in the past such as information related to prenatal histories and neurological conditions. On the other hand, the study should be replicated so more cases can be added to the data set before these results can be generalized across the states involved in this study or before assumptions are made about the characteristics of the young people and their families.

CONCLUSION

The analyses completed for the SOS FIRES Family Interview Study did lead to several important areas for further investigation as outlined above. Of particular interest to scientists should be the relationships between prenatal exposure to potentially teratogenic substances and child behavior as they grow and mature. As we have seen in this study, among juvenile firesetting, there was an unusually high exposure to prescription drugs, recreational drugs, and alcohol on the part of biological mothers. Of equal interest is the high prenatal exposure to recreational drugs and alcohol on the part of fathers.

Another area of future study is the relationship between the prenatal exposures suffered by the youth in the current study and the high number of childhood diagnoses they experienced. More work is needed to understand the relationship between the high percent of young people with ADD/ADHD and firesetting behavior. Researchers must explore the reasons that so many children and adolescents, with diagnosable physical and psychiatric conditions, find their way into our youth firesetting intervention programs. Is it possible to explore with our colleagues, in the physical and mental health fields, whether the diagnoses listed above, in this report, carry with them a serious risk of firesetting behavior?

Along with these research questions, this study raised so many questions related to youth behavior, supervision, and the potential to set fires. For instance, if a child or adolescent is diagnosed with a mental health condition, should that trigger a referral to a youth firesetting intervention program that can help parents/guardians understand the importance of restricting access to fire ignition devices and providing increased supervision. The current study would suggest that these relationships with colleagues in other fields are essential to develop, and it is important to ensure that referrals flow in both directions.

The final area to conclude from this study is the questions Interventionists may want/need to add to the interviews for their youth firesetting intervention programs. Although Interventionists are not mental health specialists, they can still ask questions like whether the young person was prenatally exposed to alcohol and other drugs. They certainly would want to ask whether the child and/or family have been involved with any physical or mental health professionals and whether the child or adolescent is currently taking any medications. Beyond those, this study should offer Interventionists a host of possible questions to add to their interviews and areas to explore for education related to youth firesetting behavior.

RECOMMENDATIONS

The accumulated data over the course of these two research projects (2002 and 2003) has provided a wealth of information that cannot be assimilated during the course of this research project. Therefore, SOS FIRES has submitted a grant request to study the collected data and work toward the development of useful conclusions to apply to the youth firesetting intervention problem in North America. In the meantime, it is our sincere hope that others will read this data report and be inspired to look deeper into youth firesetting behaviors to develop more sophisticated and effective intervention programs as well as prevention programs. Thank you for reading and considering the implications of this work.

APPENDIX A

Forms and Protocols

SOS Fires Protocol for Handling Research Materials

1. Make appointment to visit the family at their home, or in a neutral place.
2. Plan to dress casually – the idea is to be a non-threatening researcher, not a fire prevention educator.
3. Access the case file from the firesetting intervention program in which the child participated.
4. Assemble materials: tape recorder (check batteries, 2-3 tapes), Adult Interview Protocol, Adult Consent Form, Youth Interview Protocol, Youth Assent Form, 2-3 pens.
5. Fill out pages 1 & 2 of the Adult Interview Protocol from the screening material.
6. Confirm the appointment, by phone, at least once the day before the meeting.
7. At the appointment, begin with the family together, if possible, to explain the consent forms – have the **adult guardian** sign the Adult Consent Form. Youth may sign the Youth Assent Form at the beginning or later when alone with you.
8. Ask to see adults or youth alone for first interview – for youth, have him/her sign the Youth Assent Form. Ask for any questions. Turn on tape & begin the interview. Use paper form for notes.
9. Ask to see adults alone for their interview. Ask for any questions. Turn on tape & begin interview. Use paper form for notes.
10. After adult interview, thank everyone for his or her help. Give stipend (gift certificate) to adult guardian. Reassure all that tapes and notes will go directly to Data Manager and will be confidential.
11. After leaving, be careful to **label tapes** with family name & date.
12. Assemble materials for Data Manager:
 - Copy of the intake/screening form
 - Both Adult Consent & Youth Assent Forms
 - Both Adult & Youth Interview Protocol
 - Both labeled tapes

Send to:

Donna Burgess
Burgess Consulting
8871 Rendon Drive
Anchorage, AK 99507
(907) 344-5467

13. Any copies you keep of research materials, you are responsible for following all National Institutes of Health Guidelines for Human Subjects Protection! Please take the Human Subjects on-line course, or we could lose this and any future grants. Thanks!

BENEFITS:

The results of this study will benefit families who work with the youth firesetting intervention program in the future. The only direct benefit to you, from participating in this study, will be a small gift certificate to thank you for your help.

RISKS:

It is possible that the discussion of feelings may make you feel sad or uncomfortable. However, there are not any other known risks to you.

CONTACT PEOPLE:

If you have any questions about this research, or about your rights as a person who completes an interview, please contact Don Porth, Director, SOS Fires, at (503) 805-8482, or Dr. Donna Burgess, Research Director, at (907) 344-5467.

SIGNATURE:

Your signature on this consent form indicates that you fully understand the above study, what is being asked of you in this study, and that you are signing this by your choice. If you have any questions about this study or need to have this consent form translated, please feel free to ask me at any time.

Signature_____ Date_____

CONSENT FOR YOUTH PARTICIPATION:

We would also like the opportunity to speak with your son/daughter who has been involved in a youth firesetting intervention program. They will have all their rights explained (during which you may be present), and they will have a chance to sign an assent form for youth under age 17. We would also like your permission to send a copy of your original intake form and notes to our Research Director. She can coordinate those results with the answers from these interviews. Your signature below indicates that you give your permission for me to ask your son/daughter if he/she is willing to participate in the youth interview and use your intake materials in a confidential way.

Signature_____ Date_____

ADULT INTERVIEW PROTOCOL

1. Interviewer: _____ Date: _____
2. Interview Start Time: _____ AM/PM Interview End Time: _____ AM/PM
3. City/Town of Interview: _____ State: _____
4. City/Town of Fire Jurisdiction: _____ State: _____

Screening Information: (Fill in this section before interview)

5. Name of Child/Adolescent Concerned: _____
First, Middle Initial, Last
6. Date of Birth: _____ Age at time of Referral: _____ yrs _____ mos
7. Date of First Referral: _____ Source of Referral: _____
8. Date of Initial Screening: _____ Name of Screener: _____
9. Name of Person(s) Interviewed at Screening & Relationship to Child/Adolescent:
- Name:* _____ *Relationship:* _____
- Name:* _____ *Relationship:* _____
10. Results of JFS Intake:
- Level of Concern Assigned:* _____
- Referrals Made after Intake:* _____
11. Results of SOS Study:
- Level of Concern Assigned:* _____
- Additional Referrals Made after Study (if any):* _____
12. Disposition of Case after Screening (a) Record family follow-through b) Note any additional fire activity after screening):

Current Family Information:

13. Current age of the Child/Adolescent Concerned: ___ yrs ___ mos **Grade** ___

14. What is the legal status of the child/adolescent at the time of this interview? (Check all that apply)

- Biological child w/ both parents/married ___ Biological child w/ one parent/single ___
Biological child w/ one parent/separated ___ Biological child w/ one parent/divorced ___
Biological child/split time between homes ___ Biological child w/1 parent only/remarried ___
Child living w/ relatives in foster care ___ Child living in a group home ___
Child living in State foster care ___ Child living w/ relatives in adoptive home ___
Child living in other adoptive home ___ Child living in residential placement ___
Youth in State custody/incarceration ___ Other _____

15. Please list the ages and status (related to the parent of the child screened) of the child/adolescent's siblings at the time of this interview.

1. Initials ___ Age ___ Bio ___ Step ___ ½ ___ Foster ___ Relative ___ Adopt ___
2. Initials ___ Age ___ Bio ___ Step ___ ½ ___ Foster ___ Relative ___ Adopt ___
3. Initials ___ Age ___ Bio ___ Step ___ ½ ___ Foster ___ Relative ___ Adopt ___
4. Initials ___ Age ___ Bio ___ Step ___ ½ ___ Foster ___ Relative ___ Adopt ___
5. Initials ___ Age ___ Bio ___ Step ___ ½ ___ Foster ___ Relative ___ Adopt ___

Continue siblings on back of page if necessary.

16. Please list the names and ages of the parent(s) and/or legal guardians with whom the child/adolescent currently lives.

Primary Residence:

- Name or Initials _____ Age _____ Relationship to Child: _____
Current Occupation _____ Highest Grade, Degree, Trade School _____
Name or Initials _____ Age _____ Relationship to Child _____
Current Occupation _____ Highest Grade, Degree, Trade School _____

Second Residence:

Name or Initials _____ Age ____ Relationship to Child: _____

Current Occupation _____ Highest Grade, Degree, Trade School _____

Name or Initials _____ Age ____ Relationship to Child: _____

Current Occupation _____ Highest Grade, Degree, Trade School _____

Medical History:

17. What can you tell me about the pregnancy with _____ (Child's name)? Was it normal or were there any complications?

18. Was _____ (Child's name) born full term? _____ If no, how many weeks premature was he/she? _____.

19. What can you tell me about _____'s (Child's name's) birth? Were there any problems?

20. Did the baby experience any of the following? (Check all that are appropriate).

Caesarian section _____ Cord wrapped around neck _____

Difficulty breathing _____ Spent time in an incubator / oxygen _____

"Blue baby" _____ Low Apgar scores at birth or 5 min. _____

21. Before _____ (Child's name) was born, did his/her biological father or mother take any prescription medications?

Father _____ List all Meds known _____

Mother _____ List all Meds known _____

22. Before _____ (Child's name) was born, how much caffeine or nicotine did his/her biological father or mother typically use each day?

Father _____ Caffeine per day _____ Nicotine per day _____

Mother _____ Caffeine per day _____ Nicotine per day _____

23. Before _____ (Child's name) was born, how much alcohol did his/her biological father or mother typically use each day or week?

Father _____ Alcohol per day _____ or Alcohol per week _____

Mother _____ Alcohol per day _____ or Alcohol per week _____

24. Before _____ (Child's name) was born, what other recreational drugs did his/her biological father or mother use?

Father _____ Drug #1 _____ How often? _____

Drug #2 _____ How often? _____

Mother _____ Drug(s) _____ How often? _____

Drug #2 _____ How often? _____

25. Does anyone in your home currently smoke? Yes _____ No _____

1. Initials _____ Age _____ Relationship to child _____

2. Initials _____ Age _____ Relationship to child _____

3. Initials _____ Age _____ Relationship to child _____

4. Initials _____ Age _____ Relationship to child _____

Childs' Health Status:

26. Did _____ (Child's name) have any surgeries before he/she started school? What was done? At what age?

27. Does _____ (Child's name) have any diagnoses from a doctor or psychologist to explain a physical or behavioral condition? (Check all that apply- listed in no particular order!)

Attention deficit disorder (ADD)____
Attention deficit w/hyperactivity (ADHD)____
Childhood asthma _____
Oppositional defiant disorder (ODD)_____
Head injury _____
Child physical and/or sexual abuse _____
Carbon monoxide poisoning _____
Fetal alcohol syndrome/effects _____
Reactive attachment disorder _____
Self injurious behavior _____
Other diagnoses or explanation of above:_____

28. Does _____ (Child's name) take any medication for a physical or behavioral condition?

Medication #1: _____ Dose: _____

Who gives meds? _____ Who prescribes? _____

Medication #2: _____ Dose: _____

Who gives meds? _____ Who prescribes? _____

Medication #3: _____ Dose: _____

Who gives meds? _____ Who prescribes? _____

Other information about medication:_____

29. If _____ (Child's name) takes any medication, does he/she have any problem "sticking" to his/her dose schedule at school or at his/her other home?

Child's Development & School History:

30. When _____ was a toddler, how successful were your first experiences of disciplining him/her? Do you feel that he/she had any behavior challenges as a young child?

31. After ____ (Child's name) was born, did he/she seem to develop normally? Do you remember any problems with his/her eating, sleeping, or crying?

32. Did ____ attend a preschool program? Yes ____ No ____

What kind of preschool program did ____ attend (e.g., Montessori, Headstart, family daycare)?

33. How did he/she do in preschool? Did he/she have any behavior challenges reported to you by teachers or others? What were the challenges/problems?

34. Did ____ attend kindergarten? Yes ____ No ____

35. How did he/she do in kindergarten? Did he/she have any behavior challenges reported to you by teachers or others? What were the challenges/problems?

36. How about the grades since then? How is ____ doing in school academically?

37. Has ____ had any behavior challenges reported to you by teachers or others in the last two years? What are the challenges/problems?

38. Since _____ has been in school, how have you, or another parent, taught him/her to deal with conflict with others? Does that strategy seem to work for him/her?

39. How have you, or another parent, taught _____ to deal with frustration (as with a task or homework)? Do you think that works for him/her?

40. How would you describe _____'s friends?

41. What does _____ do when he/she is with his/her friends?

42. Not including school, how does _____ spend the MOST time? (*Put in rank order with #1 being the most time spent in this environment.*)

Alone at home _____ Alone somewhere other than home _____
With friends at our home _____ With friends, not at our home _____
With family at our home _____ With family, activities not at our home _____
With his/her second family _____ Other _____

43. What activity has _____ done in the past that resulted in injury to him/her?

44. What other activities does _____ do where he/she might get hurt?

45. Do you think _____ has a normal tolerance for pain? For example, if he/she gets burned can he/she handle more pain or less pain than his/her friends? Can you give an example?

46. Where is your child between the end of classes, during the school year, and dinner on most days?

47. Who is responsible for his/her safety during that time?

48. How does that person monitor (check in on) what _____ is doing during that time?

49. The day that _____ set his/her last fire, was that a typical day? In terms of where they were, who was with them, who was watching out for them?

50. Have you ever known _____ to be the victim of one or more bullies? Could you give an example?

51. Have you ever known _____ to act like a bully? Could you give an example?

52. Have you ever known _____ to bully a parent? Another authority figure?

53. How would you describe _____'s usual mood? Is he/she happy, sad, talkative, quiet, etc.?

54. Is _____ ever depressed? Yes _____ No _____ About how long do those periods seem to last ? _____ Hrs _____ Days _____ Weeks

55. Has _____ ever talked about committing suicide – him/herself or by a friend? How did you, or another parent, respond?

56. What do you think are _____'s greatest strengths (academic, athletic, talents, etc)?

57. Is there anything else you'd like to tell me about _____? Is there anything important we haven't talked about?

YOUTH INTERVIEW PROTOCOL

1. Interviewer: _____ Date: _____
2. Interview Start Time: _____ AM/PM Interview End Time: _____ AM/PM
3. City/Town of Interview: _____ State: _____
4. City/Town of Fire Jurisdiction: _____ State: _____

Screening Information: (Fill in this section before interview)

5. Name of Child/Adolescent Concerned: _____
First, Middle Initial, Last
6. Date of Birth: _____ Age at time of Referral: _____ yrs _____ mos

Early School Years:

7. Did you go to kindergarten? Yes ____ No ____

8 What do you remember about kindergarten? How did you do in school that year?

9. How about the years since then? How are your grades in school?

10. Have you had any problems with behavior in the last two years?

11. What has your parent, or another adult, taught you about how to deal with conflict with other people? Does that strategy seem to work for you?

12. What has your parent, or another adult, taught you about how to deal with frustration (like a task or homework)? Does that strategy seem to work for you?

13. How would you describe your friends?

14. What kinds of activities do you do with your friends, NOT including the school day?

15. Not including school, how do you spend the MOST time? (*Put in rank order with #1 being the most time spent in this environment.*)

Alone at home _____ Alone somewhere other than home _____
With friends at our home _____ With friends, not at our home _____
With family at our home _____ With family, activities not at our home _____
With my second family _____ Other: _____

16. What activity have you done in the past where you have gotten hurt (either a little or a lot)?

17. Which of the following activities have you done, two or more times?

Climbing & jumping from high places _____ Riding a bike without a helmet _____
Skateboarding without helmet _____ Snowboarding without a helmet _____
Skipping a class _____ Sneaking out at night _____

Driving too fast _____ Riding in a car without a seatbelt _____

Cutting your own skin on purpose _____ Burning yourself on purpose _____

Drinking alcohol with friends _____ Smoking marijuana _____

Taking something that is NOT yours _____ Setting a fire _____

18. Do you do this by yourself or when you're with others? If others, who?

19. Do you think you feel pain in a normal way? For example, if you get burned can you handle more pain or less pain than your friends? Can you give an example?

Supervision:

20. Do you or anyone else in your home currently smoke? Yes _____ No _____

1. Initials _____ Age _____ Relationship to child _____

2. Initials _____ Age _____ Relationship to child _____

3. Initials _____ Age _____ Relationship to child _____

4. Initials _____ Age _____ Relationship to child _____

21. Where is smoking allowed in your home?

If not inside, where does someone smoke?

22. If you smoke, where do you keep your cigarettes, matches &/or lighters?

23. If others smoke, where do they keep their cigarettes, matches &/or lighters?

24. Can you easily get cigarettes if/when you want them?

25. Where are you between the end of classes, during the school year, and dinner on most days?

26. Who is responsible for your safety during that time?

27. How does that person monitor (check in on) what you are doing during that time?

28. On the day that you set the last fire, was that a typical day? In terms of where you were, who was with you, who was watching out for you?

29. What sort of things do you do with your family when you're together?

30. What sort of things do you do when you're alone?

31. What are your favorite tv shows or movies to watch? Are you allowed to watch this show(s) all the time?

32. What are your favorite video games to play? Do you play at home? Are you allowed to play any time?

33. How would you describe your usual mood? Are you happy, sad, talkative, quiet, etc.?

34. Are you ever depressed? Yes _____ No _____ About how long do those periods seem to last ? _____Hrs _____ Days _____ Weeks

35. Have you ever been the victim of one or more bullies (*youth or adult*)? Please give an example?

36. Have you ever acted like a bully? Could you give an example?

37. Have you ever thought about committing suicide? Have you talked about it with a friend or a family member?

38. What do you think are your greatest strengths (academic, athletic, talents, etc)?

39. Is there anything else you'd like to tell me about? Is there anything important we haven't talked about?

Report End