

CHAPTER 5

DATA ANALYSES

This chapter will discuss the diagnostic actions taken to ensure the integrity and appropriateness of the data. Missing data patterns and the steps taken to impute missing data will also be examined. In addition, descriptive statistics will be utilized to present various sample characteristics from the caregivers, both birth mothers and others, as well as the children under their care. The independent and dependent measures will be subjected to tests of reliability and validity, including subjecting the stress-arousal checklist (SACL) to factor analysis. Also, to support the sampling strategy of combining the subjects from multiple program years, the stress and arousal scores will be compared across the years to analyze any significant variances. Once the previously described steps have been completed, the data will be subjected to bivariate and multivariate statistical procedures, including t-tests, general linear regression, and regression with multiplicative interaction terms, to provide answers to the three research questions posed. In addition, for those interactions shown to be significant, a decomposition analysis will be performed and discussed.

Diagnostics/Missing Values

The first step conducted to ensure the integrity of the data was to check the accuracy of the data coding and entry into the statistical computer program (SPSS). To complete this task, a random sampling of 25% of the original program paper files (n=53) were extracted and compared to the data transcribed onto the specially designed coded data sheets. In addition, the data sheets were subsequently checked against the data

entered into the SPSS program file for each matched case. There were no discrepancies identified. Lastly, data ranges were checked for each variable entered (n=59) to ensure that all data were entered within the prescribed ranges. Of the over 12,000 cells ranges examined, slightly over 5% of the cases (n=11) had at least one datum outside the delineated variable ranges. The original files for these cases were pulled and examined for accuracy. In each case, the data had been entered incorrectly (i.e., entering a 7 instead of a 4, etc.). The data were subsequently corrected for each of the cases, and all of the data was found to lie within the necessary parameters.

Once the data had been checked for data entry accuracy, the data was tested for influential cases. As such, an individual subject's data containing extremely high or low values as compared to the remainder of the data may unduly influence the estimation of the regression line (Neter, Kutner, Nachtsheim, & Wasserman, 1996). Therefore, to identify any potentially influential data, Cook's Distance and single fitted values were utilized. Neither produced any influential cases. Examination of tolerance levels and multicollinearity among the independent variables indicated no problems evident – with explanatory variables sufficiently independent of one another.¹

Although the number of subjects in the study was 212, there were 96 cases that had at least one independent variable item missing. Thus, utilizing a listwise method of data analysis would have resulted in using only the remaining 116 complete cases, reducing the sample size 45%. Therefore, to utilize all available data a method of data

¹ Multicollinearity was evident within the interaction terms. The centering procedure utilized to correct for this is described under section “Analyses – Research Question #2”.

imputation was chosen to estimate the missing data.² This was done because the study is explanatory, and the subject matter is such that some extreme attitudes and missing data could be expected. Utilizing the SPSS program *Missing Value Analysis 7.5*, an expectation maximization (EM) technique is used with inferences assumed based on the likelihood under the normal distribution (Hill, 1997). As Hill conveys:

Each iteration consists of an E step and an M step. The E step finds the conditional expectation of the “missing” data, given the observed values and current estimates of the parameters. These expectations are then substituted for the “missing” data. In the M step, maximum likelihood estimates of the parameters are computed as though the missing data had been filled in. “Missing” is enclosed in quotation marks because the missing values are not being directly filled, but, rather, functions of them are used in the log-likelihood (p. 41).

Another assumption is that the missing data is ‘missing completely at random’ (MCAR). If this assumption is met, “[both] complete cases... [and] EM... methods give consistent and unbiased estimates of correlations and covariances (Hill, 1997, p. 42). The chi-square statistic for testing whether values are MCAR is referred to as ‘Little’s MCAR test’ (Hill). The Little's MCAR test obtained for this study’s data resulted in a chi-square = 3277.59 (df = 3393; $p < .921$), which indicates that the data is indeed missing at random (i.e., no identifiable pattern exists to the missing data). In addition, almost 16% (n=15) of the 96 cases with at least one missing variable were randomly selected and

² Because missing value estimations may fall out of the given data range for categorical variables, imputed data is only utilized when calculating the inferential statistics.

individually examined to discern if individual patterns emerged. However, none was noted. Lastly, the percentage of missing data for each of the variables can be seen in Table 1 in the section ‘Descriptive Statistics – Characteristics of the Sample’ below. The range of missing data was from 0% -19.8%, with a mean = 6.63% (SD = 6.27%). Thus all missing data percentages fell below the 20% exclusionary score established.

Descriptive Statistics – Characteristics of the Sample

A total of 212 caregiver files met the sample criteria established. This excluded 27 cases due to the child’s unknown/undetermined HIV status, yielding an ultimate inclusion rate of 88.7%. The characteristics of the respondents and their children, as shown in Tables 13-18, summarizes the various attributes of the sample utilized for analysis. This section will explore general demographic characteristics of the caregivers and index children, as well as the personal factors, stressor characteristics, and informal and formal social support characteristics.

Although families entered the program each year, as illustrated in Table 13, the majority of the families meeting this study’s criteria joined the program in its later years. Over 65% of the sample started the program within its last two years (1995-1996). From the subject families, 67.5% of the caregivers were birth mothers, with the remainder composed of birth fathers, relatives, and foster/adoptive parents. It was also found that the overwhelming majority (93.8%) of caregivers were female. Given the relatively small proportion of men within the sample, data analysis between the two groups was not possible.

Table 13: Caregiver/Household Characteristics (variables not included in regression analyses)				
<i>CHARACTERISTICS</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
Year Started	212			
1991	4	1.9		
1992	31	14.6		
1993	13	6.1		
1994	25	11.8		
1995	85	40.1		
1996	54	25.5		
Relationship	212			
Other Caregiver	69	32.5		
Birth Mother	143	67.5		
Gender	211			
Female	198	93.8		
Male	13	6.2		
Race/Ethnicity	203			
African-American	187	92.1		
White	13	6.4		
Hispanic	2	1.0		
Asian	1	0.5		
Native-American	0	0.0		
Other	0	0.0		
Age	177		34.55 y.	10.38 y.
Number of Children in the Home (including index child)	211		2.44	1.41
Effect of Child on Home	202		4.28	.95
Very Negative (1)	2	1.0		
Mostly Negative (2)	5	2.5		
Mixed (3)	44	21.8		
Mostly Positive (4)	35	17.3		
Very Positive (5)	116	57.4		

The sample was also disproportionately African-American (in relation to the population-at-large), accounting for slightly over 92% of the sample. Once again, due to the small proportion of other races and ethnic groups, further analysis between the groups was not possible. The mean age of caregiver respondents was 34 ½ years old ($\mu=34.55$, $sd=10.38$), ranging from 15 to 66 years of age. The number of children in each home

(including the index child) ranged from 1 to 11, with an average of 2 ($\mu=2.44$, $sd=1.41$).

Lastly, despite any stressors experienced, the caregivers strongly felt that the index child had had a positive effect on the family. However, over 25% of the respondents did feel that the child had either a mixed or negative effect on the home.

As shown in Table 14, the index children were almost evenly split between males and females, with 6.2% more boys. Similar to the race/ethnicity distribution of the caregivers, the children were overwhelmingly African-American. The index children ranged in age from .08 years of age (i.e., 1 month old) to 17 years of age, with an average of approximately 4 ½ years old.

Table 14: Index Child's Characteristics (variables not included in regression analyses)				
<i>CHARACTERISTICS</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
Gender	209			
Female	98	46.9		
Male	111	53.1		
Race/Ethnicity	203			
African-American	186	91.6		
White	12	5.9		
Hispanic	1	0.5		
Asian	0	0.0		
Native-American	1	0.5		
Other	3	1.5		
Age	204		4.52 y.	3.84 y.

The caregiver's personal factor characteristics can be seen in Table 15. Over half of the caregivers expressed no limits on their daily living tasks due to health issues.

However, 44.5% of the respondents were limited by health difficulties at least some of the time, with over 18% almost always affected. The highest level of education achieved by the primary caregiver was skewed toward the lower end of the measure, with almost 48% of the sample not completing high school. Only 22.7% had attended at least some college. The majority of the families (83.8%) had no other sick children in the home.

Table 15: Personal Factor Characteristics				
<i>PERSONAL FACTORS</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
Caregiver's Health Limits on Daily Living	173		1.37	1.63
None (0)	94	54.3		
Hardly Ever (1)	2	1.2		
Sometimes (2)	28	16.2		
Often (3)	17	9.8		
Almost Always or Always (4)	32	18.5		
Primary caregiver's education?	185		1.75	.80
Did Not Complete HS (1)	88	47.6		
Completed HS (2)	55	29.7		
Some College+ (3)	42	22.7		
Can any other child in the home, other than the index child, be considered in poor health?	204			
No	171	83.8		
Yes	33	16.2		

The HIV status of the index children, as listed in Table 16, was almost evenly split between negative (48.1%) and positive (51.9%). The average child was taken to the doctor's office once every 1 to 3 months, with a mode of once every 6 months (the most infrequent appointment option available). Forty-six children went to the doctor's office

more than once per month, with 11 children going once per week or more. The average child had been hospitalized slightly less than one time in the previous six months (or since birth, whichever was shorter). However, nine children had been hospitalized three times, and 15 had been hospitalized 4 or more times.

Table 16: Stressor Characteristics				
<i>STRESSORS</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
HIV Status	212			
HIV-	102	48.1		
HIV+	110	51.9		
Frequency of Dr. visits in the last 6 months?	210		2.5	1.3
Once in 6 months (1)	58	27.6		
Once every 2-3 months (2)	53	25.2		
Once per month (3)	53	25.2		
2-3 times per month (4)	35	16.7		
Once per week (5)	6	2.9		
Several times per week (6)	3	1.4		
Daily (7)	2	1.0		
How many times has this child been hospitalized since birth/last 6 months?	197		.77	1.24
0	124	62.9		
1	33	16.8		
2	16	8.1		
3	9	4.6		
4+	15	7.6		

The majority (60.8%) of the caregiver respondents were not partnered, as shown in Table 17. Almost 85% of the caregivers felt that their relatives were supportive, with only 15% stating that their relatives were not really supportive. There was more variability among caregiver responses to support from friends. Over 27% felt that their

friends were not supportive, and another 27% responding only somewhat supportive. The average respondent had 2 close friends, although there was some consistency across the range. Caregivers got along, on average, extremely well with their child, with almost 99% responding that they and their child got along either fairly or very well. Similarly, the vast majority of the caregivers spent time with their child almost every day.

Caregivers were somewhat isolated, with over half (54.5%) interacting with similar families every few months or less. Conversely, slightly more than 20% had almost daily contact with similar families, with the average caregiver in contact slightly more than once per month (although the standard deviation was quite large). Most of the caregivers were not active in their communities, with only 14.3% very active. However, although somewhat isolated from the community, caregivers overwhelmingly responded that religion was somewhat (23.9%) or very (63.3%) important in their lives. Similar to their level of community involvement, caregiver activeness in their place of worship was also low, with half of the respondents not very (25.8%) or not at all (29.7%) active.

Table 17: Informal Social Support Characteristics				
<i>INFORMAL SOCIAL SUPPORT</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
Partnership status?	199			
Not partnered	121	60.8		
Partnered	78	39.2		
Are your relatives supportive of your family?	209		2.41	.74
No, not really (1)	32	15.3		
Yes, somewhat (2)	59	28.2		
Yes, very much (3)	118	56.5		

Are your friends supportive of your family?	210		2.18	.84
No, not really (1)	58	27.6		
Yes, somewhat (2)	56	26.7		
Yes, very much (3)	96	45.7		
How many close friends do you have?	170		2.02	1.48
0	38	22.4		
1	29	17.1		
2	35	20.6		
3	27	15.9		
4+	41	24.1		
How do you and your child get along?	210		3.84	.45
Very poorly (1)	2	1.0		
Not so well (2)	1	0.5		
Fairly well (3)	26	12.4		
Very well (4)	181	86.2		
How often do you and your child enjoy time together?	211		4.45	1.34
Less than once per month or not at all (0)	10	4.7		
1 per month (1)	9	4.3		
2-3 times per month (2)	3	1.4		
1 per week (3)	5	2.4		
2-3 times per week (4)	11	5.2		
Just about every day (5)	173	82.0		
How often are you (or your spouse/mate) in contact with other families similar to yours?	202		1.57	1.58
Once per year or less (0)	80	39.6		
Every few months (1)	30	14.9		
1 per month (2)	31	15.3		
1 per week (3)	19	9.4		
Daily or almost daily (4)	42	20.8		
How active are you in your community?	182		2.16	1.08
Not active at all (1)	68	37.4		
Not very active (2)	43	23.6		
Somewhat active (3)	45	24.7		
Very active (4)	26	14.3		
How important is religion in your life?	180		1.51	.71
Not important (0)	23	12.8		
Somewhat important (1)	43	23.9		
Very important (2)	114	63.3		
How active are you in your church/synagogue?	182		2.32	1.08
Not active at all (1)	54	29.7		
Not very active (2)	47	25.8		
Somewhat active (3)	49	26.9		
Very active (4)	32	17.6		

As shown in Table 18, approximately 80% of caregivers received no support from either respite care or mental health providers. However, all had contact with the FaCT project worker and felt that their support was either adequate (24.5%) or very helpful (70.5%).

Table 18: Formal Social Support Characteristics				
<i>FORMAL SOCIAL SUPPORT</i>	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>S.D.</i>
Respite Care received?	210			
No	170	81.0		
Yes	40	19.0		
Mental Health services received?	184			
No	142	77.2		
Yes	42	22.8		
How would you describe the services provided by the agency worker?	200		2.66	.57
Not helpful (1)	10	5.0		
Adequate (2)	49	24.5		
Very helpful (3)	141	70.5		

Reliability Issues

Once the missing values analysis had been completed and the results of the EM estimates inserted into the appropriate cases, the measures to be used within the subsequent inferential statistics were created as described in Chapter 4. For example, to create the measure ‘illness management’ a composite score was created through the summing of responses to the questions – ‘Frequency of Dr. visits in the last 6 months?’ and ‘How many times has this child been hospitalized since birth/last 6 months?’. The results of these scale creations can be found in Table 19. It should be noted that since the

scales were created through the combination of questions utilizing different scoring matrices, direct interpretation is not possible. For example, a caregiver may score from 1 to 11 on illness management, yet it is not directly known if an individual with a score of 5 took the child to the hospital 3 times and doctor's office once every two months (which is scored as 2). It is not possible to ascertain the direct permutation of tasks undertaken to receive such a score. Rather, the composite score is utilized to demonstrate the relative level of illness management tasks, such that its relation to the mean under the normal curve (i.e., skewness) can be examined.

Earned scores on the illness management scale were low, averaging 3.27 (SD=2.10) with an α of .58. Family support fell almost at the mid-point, with scores averaging 2.80 (SD=0.93) and an α of .22. Support from friends was moderate, averaging 4.30 (SD=1.92) and an α of .51. Support from the index child was quite high, averaging 8.28 out of a possible 9 point scale (α =.35). Connections with the community scored below the mid-point (μ =3.74; SD=2.11), with an α of .44. Church/Spiritual support averaged 3.84 (SD=1.55), with an α of .69. Lastly, formal service support scores averaged 3.04 (SD=0.83), with an α of .10.

The alpha's for the independent variable measures ranged from a low of .10 for formal service support to a moderate .69 for church/spiritual support. Those in the low range (i.e., .10 - .35) include family support, child support and formal service support. The remainder fell within a moderate range of reliability, with alpha's ranging from .44 to .69. These included community connection, friend support, illness management, and church/spiritual support (listed from lowest to highest). None of the measures fell within the more acceptable range of $\alpha > .80$.

Table 19: Scale Validation			
<i>Scales</i>	<i>Mean</i>	<i>S.D.</i>	<i>Alpha</i>
Illness Management (1-11)	3.27	2.10	.58
Family Support (1-4)	2.80	0.93	.22
Friend Support (1-7)	4.30	1.92	.51
Child Support (1-9)	8.28	1.57	.35
Community Connection (1-8)	3.74	2.11	.44
Church/Spiritual Support (1-6)	3.84	1.55	.69
Formal Service Support (1-5)	3.04	0.83	.10
Stress (1-4)	2.06	0.84	.86
Arousal (1-4)	2.94	0.79	.84

Factor Analysis, Scale Development and Reliability for the SACL

Prior to examining potential factor extractions and data reduction, descriptive statistics were run on the individual items to ensure their appropriateness for analysis. With a KMO amount of .89, and a significant chi-square = 3239.5 ($p < .001$; $df = 435$) on Bartlett's Test of Sphericity, the data appears to be suitable.

In order to determine the appropriate number of factors to best represent the SACL, Johnson and Wichern's (1998) strategies for factor extraction was loosely followed. Utilizing the seven potential factor extraction methods provided by SPSS (PC – Principal Component; ULS - Unweighted Least Squares; ML - Maximum Likelihood; GLS – General Least Squares; PAF - Principal Axis Factoring; ALPHA - Alpha Factoring; and, IMAGE - Image Factoring), reproduced correlations were obtained and the extraction methods with the least number of non-redundant residuals were kept for further use. The non-redundant residual amounts for each extraction method were: PC – 136; *PAF* – 51; *ULS* – 51; ML – 54; GLS – 71; IMAGE – 57; ALPHA – 71. Varimax and Oblimin rotations were then conducted utilizing the two extraction methods retained

as described above. The factor loadings were obtained after 34 iterations, producing 6 total factors with Eigenvalues > 1 , explaining approximately 53% of the variance.

Items were only kept if they had a factor loading $>.6$ and did not cross-load between factors. Thirteen adjectives (tense, relaxed, restful, apprehensive, worried, drowsy, vigorous, peaceful, tired, idle, alert, jittery, and sluggish) did not meet the loading criteria for any factor and were eliminated. There was some consistency between the extraction and rotation methods with only one item (lively) cross-loading onto more than one factor. Another 5 items (active, energetic, sleepy, stimulated, and activated) loaded variously on the other factors. However, they did not appear to form a coherent theme and were deleted as nuisance factors.

After deleting the various adjectives that did not meet the selection criteria, the factor analysis was run again. The resultant scales contain 11 total items split among two factors that explain 52.91% of the variance. The two scales are comprised of the following adjectives: stress – bothered, uneasy, dejected, nervous, distressed, uptight; arousal – cheerful, contented, pleasant, comfortable, calm. Each of the scales have alpha's in the high range, .86 and .84 respectively. The scores on the stress sub-scale reported an average of 2.06 (SD=0.84), with scores ranging along the continuum from 1 to 4. Scores on the arousal sub-scale are higher, averaging 2.94 (SD=0.79); which places it in the affirmative (+) range.

Chronological Bias

To assess the potential bias due to those individuals entering the program at different chronological points a comparison was conducted between the yearly cohorts. An ANOVA was conducted grouping the stress and arousal scores together for the yearly

cohorts. Assuming equal variances among the groups (as determined by Levene's test for Equality of Variance, stress = $p < .515$; arousal = $p < .217$), no statistical differences were found between the yearly cohorts on either of the scales (stress, $f(5, 206) = 1.345$, $p < .247$; arousal, $f(5, 206) = .312$, $p < .906$). Therefore, it can be assumed that the sample obtained is not skewed due to temporality.

Analyses – Research Question #1

Research question #1 asks if there are significant differences between birth mothers and other caregivers on a variety of personal factors, stressors, and informal and formal social support measures, as well as their respective scores on the stress and arousal sub-scales. To determine if the scores of birth mothers and other caregivers differed significantly, independent sample t-tests were conducted for each of the hypothesized relationships. The results can be seen in Table 20 below.

Hypothesis 1.1: *In comparing birth mothers to other caregivers, birth mothers will have significantly more limits on their daily living due to health concerns..*

Results 1.1: The mean score for birth mothers was 1.51, which is significantly higher than the corresponding score for other caregivers ($\mu = 1.05$). As such, birth mothers reported more impact upon their daily living tasks due to health related issues than did their non-HIV positive counterparts. Therefore, the null hypothesis can be rejected. As it appears that birth mothers in this sample have more health related difficulties.

Hypothesis 1.2: *In comparing birth mothers to other caregivers, birth mothers will have significantly lower education levels.*

Results 1.2: The mean score for birth mothers was 1.68, which indicates that the majority of birth mothers did not complete high school. Other caregivers scored significantly higher ($\mu=2.04$), with the average respondent completing high school. As such, birth mothers reported less formal education than did their non-HIV positive counterparts. Therefore, the null hypothesis can be rejected.

Table 20: T-test Results				
	<i>Birth Mothers</i>		<i>Other Caregivers</i>	
	<i>Mean</i>	<i>S.D.</i>	<i>Mean</i>	<i>S.D.</i>
<i>PERSONAL FACTORS</i>				
Caregiver's Health Limits on Daily Living (0-4)	1.51*	1.56	1.05	1.49
Primary caregiver's education? (1-3)	1.68***	.77	2.04	.76
Can any other child in the home, other than the index child, be considered in poor health? (0-1)	.12*	.32+	.25	.44
<i>STRESSORS</i>				
HIV Status (1-2)	1.44***	.50+	1.68	.47
Illness Management (1-11)	3.12	2.06	3.60	2.16
<i>INFORMAL SOCIAL SUPPORT</i>				
Family Support (1-4)	2.68**	.96+	3.05	.81
Friend Support (1-7)	3.82***	1.79	5.30	1.82
Child Support (1-9)	8.26	1.51	8.32	1.71
Community Connection (1-8)	3.68	2.14	3.86	2.05
Church/Spiritual Support (1-6)	3.59***	1.53	4.34	1.49
<i>FORMAL SOCIAL SUPPORT</i>				
Formal Service Support (1-5)	3.03	.83	3.06	.84
<i>STRESS-AROUSAL CHECKLIST</i>				
Stress (1-4)	2.20***	.79	1.78	.86
Arousal (1-4)	2.86*	.80	3.10	.75
NOTE: *= $p<.05$; **= $p<.01$; ***= $p<.001$; +=Levene's test for equality of variance not assumed				

Hypothesis 1.3: *In comparing birth mothers to other caregivers, significantly more birth mothers will have another sick child in the home.*

Results 1.3: There was a significant difference between the amount of birth mothers and other caregivers caring for another sick child. However, contrary to the hypothesis, other caregivers had a mean twice as high as birth mothers. On average, one out of every 4 non-birth mother caregivers also cares for another sick child (in addition to the index child). Slightly more than one out of every 10 birth mother care for an additional sick child. Therefore, the null hypothesis, that birth mothers care for the same amount (or less) of other sick children when compared to other caregivers, cannot be rejected.

Hypothesis 1.4: *In comparing birth mothers to other caregivers, significantly less birth mothers will have an HIV positive child in the home.*

Results 1.4: Birth mothers had significantly less HIV positive children in their care than did their counterparts. Less than half (44%) of the children cared for by the birth mothers in the sample were identified as HIV positive ($\mu=1.44$, $SD=.50$). Conversely, as shown in Table 20, slightly more than half (68%) of the children cared for by other caregivers were infected. Therefore, the null hypothesis that birth mothers in the sample are caring for the same amount or more HIV positive children can be rejected.

Hypothesis 1.5: *In comparing birth mothers to other caregivers, birth mothers will have a significantly lower level of illness management tasks.*

Results 1.5: Birth mothers made, on average, slightly more than 3 trips to the doctor and/or hospital in the previous six months on the child's behalf. Similarly, other caregivers also made approximately 3 doctor/hospital visits. There was no statistically

significant difference between the illness management tasks of the two caregiver groups. Thus, the null hypothesis cannot be rejected.

Hypothesis 1.6: *In comparing birth mothers to other caregivers, birth mothers will have significantly less support from family.*

Results 1.6: Birth mothers had a significantly lower mean composite score on family support, as shown in Table 20, than did other caregivers. Birth mothers scored slightly over the mid-point, while other caregivers scored over the 65th percentile. Thus, birth mothers perceived less support from family than did other caregivers. The null hypothesis can be rejected.

Hypothesis 1.7: *In comparing birth mothers to other caregivers, birth mothers will have significantly less support from friends.*

Results 1.7: The mean composite score for birth mothers ($\mu=3.82$, $SD=1.79$) fell below the median response range for the category, which indicates that the majority of birth mothers did not perceive adequate support from their friends. In comparison, other caregivers reported significantly higher perceived support from their friends. Therefore, as indicated, the null hypothesis can be rejected.

Hypothesis 1.8: *In comparing birth mothers to other caregivers, birth mothers will have significantly more support from children.*

Results 1.8: Contrary to the hypothesis, other caregivers reported as much of a support relationship with the index child as did birth mothers. As such, there was no significant difference between birth mothers and other caregivers level of perceived support from the index child. However, both caregiver groups reported extremely high scores within this response category, indicating that both groups felt the index child was a

support. Each caregiver group scored over 8 out of a possible 9 point range. Therefore, the null hypothesis for child support cannot be rejected.

Hypothesis 1.9: *In comparing birth mothers to other caregivers, there will be no difference between birth mothers and other caregivers' level of connection to the community.*

Results 1.9: Both birth mothers and other caregivers scored below the median response range for connections with the community. This may indicate that both birth mothers and other caregivers are isolated from their communities. There was no statistically significant difference between the two group's scores, as listed in Table 20. Therefore, the null hypothesis can be rejected.

Hypothesis 1.10: *In comparing birth mothers to other caregivers, there will be no difference between birth mothers and other caregivers' level of support from church/spirituality.*

Results 1.10: It was hypothesized that there would be no difference between the two caregiver groups. However, although birth mothers scored above the mid-point, other caregivers reported significantly higher scores of church/spiritual support. Therefore, the null hypothesis cannot be rejected.

Hypothesis 1.11: *In comparing birth mothers to other caregivers, birth mothers will have significantly less support from formal service supports.*

Results 1.11: Birth mothers and other caregivers reported almost exact levels of support from formal sources, with both falling at approximately the median response range for the category. Therefore, contrary to expectations, the null hypothesis cannot be rejected.

Hypothesis 1.12: *In comparing birth mothers to other caregivers, birth mothers will have significantly higher stress levels.*

Results 1.12: The mean score for birth mothers was 2.20 (SD=.79), which indicates that the majority of birth mothers had at least some (+) stress. Other caregivers reported significantly lower ($\mu=1.78$, SD=.86) stress levels than their counterparts. Neither group scored in the high (++) stress range. Therefore, the null hypothesis can be rejected.

Hypothesis 1.13: *In comparing birth mothers to other caregivers, birth mothers will have significantly lower arousal levels.*

Results 1.13: Birth mothers, as hypothesized, reported significantly lower arousal scores than did other caregivers, although both groups had scores in the positive (+) range. Therefore, the null hypothesis can be rejected.

Analyses – Research Question #2

The first step in the process of exploring the moderating effect of social support was to regress the personal factors and stressors on the two dependent variables, stress and arousal. Therefore, an ordinary least squares regression model is utilized to examine the relationships hypothesized below. However, before proceeding with the regression analyses the data were centered (i.e., put in deviation score form) (Aiken & West, 1991). This is done to counteract the harmful effects of multicollinearity between the independent variables and the interaction variable, which is a product term created from the independent variables (Jaccard, Turrisi & Wan, 1990). To eliminate the lack of scale invariance, the scales are transformed by additive constants, the adding or subtracting of a constant (in this case subtracting the mean) from the predictor scores (Aiken & West).

For example, an individual with a raw score of 6.07 on the illness management scale will have the mean (3.27) subtracted from the score, yielding a centered score of 2.80. The new centered scores, each with a mean equal to 0, are thus sufficiently independent of one another. However, according to Aiken and West, the rescaling has no effect on the significance of the linear regression. It is recognized that although the interaction terms are not utilized in the equations in this section, centering was done at this step to ensure continuity between this and the subsequent parts of the analyses.

As shown in Table 21, the personal factors alone predicted a significant, albeit moderate, amount of the variance in the caregiver stress levels reported. All of the personal factors impacted the dependent variable in the hypothesized direction. However, only one of the factors, Caregiver's Health Limits, was significant. The addition of the stressor variables to the regression equation decreased the adjusted R^2 amount by .2%, although the equation was still a significant predictor model.

Table 21: Main Effects for Personal Factors and Stress upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	14.0***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.11	.07	.11	
Another Child Ill?	.04	.15	.76	
Constant	2.07	.05	.00	13.8***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.10	.07	.15	
Another Child Ill?	.03	.15	.82	
Stressors				
HIV Status	-.07	.13	.57	
Illness Management	.04	.03	.23	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

The personal factors' impact on caregiver arousal levels also explained a significant amount of the variance (19.5%). Two of the three personal factors – Caregiver's Health Limits and Another Child Ill – were significant. All three factors, as illustrated in Table 22, had an impact on the dependent variable, arousal, in the intended direction. The addition of the two variables – HIV status and Illness Management – increased the amount of the adjusted R² by .7%. While the overall model remained significant, the *addition* of the stressor variables themselves was not significant.

Table 22: Main Effects for Personal Factors and Stress upon the Dependent Variable 'Arousal'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.94	.05	.00	19.5***
Personal Factors				
Caregiver's Health Limits	-.23	.03	.00	
Educational Level	.04	.06	.48	
Another Child Ill?	.33	.14	.01	
Constant	2.94	.05	.00	20.2***
Personal Factors				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	.03	.06	.60	
Another Child Ill?	.37	.14	.01	
Stressors				
HIV Status	-.08	.12	.48	
Illness Management	-.03	.03	.21	

NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001

Hypothesis 2.1: *Controlling for personal factors, the index child's illness status will be a significant predictor of; a) caregiver stress levels, b) caregiver arousal levels.*

Results 2.1: The HIV status of the index child cared for was not a significant factor in either regression equation. The factor remains non-significant throughout all of the subsequent regression equations as moderator and interaction variables are included. In addition, contrary to expectations, this variable affected the dependent variable, stress, in the opposite direction than hypothesized. However, the variable did influence the caregiver's arousal level in the hypothesized direction. Therefore, the null hypotheses cannot be rejected.

Hypothesis 2.2: *Controlling for personal factors, the level of illness management will be a significant predictor of; a) caregiver stress levels, b) caregiver arousal levels.*

Results 2.2: Similar to the previous hypothesis, illness management was not a significant predictor in either of the initial two regression equations. However, in subsequent regression models which included various moderator and interaction variables this variable did attain statistical significance. The models that Illness Management became significant all contained the arousal dependent variable, and the following moderators with their respective interaction terms; Child Support, Community Connections, and Formal Service Support. In all models, Illness Management impacted the dependent variables in the hypothesized directions. However, within the basic model presented above, the null hypotheses cannot be rejected.

Analyses – Research Question #3

The final step in the exploring the hypothesized moderating relationships of social support upon the stressor variables was to add each social support measure and its corresponding interaction terms to the regression equations utilized above. Once the centering of all the dependent variables had been accomplished, a multiplicative interaction term was created for each social support/stressor combination. For example, to test the main and interaction effects of family support upon the dependent variable

(stress) the following equation was created (utilizing centered scores):

$$\begin{aligned} \text{Predicted Value (Stress)} = & b_0 + b_1(\text{Caregiver Health Limits}) + b_2(\text{Educational} \\ & \text{Level}) + b_3(\text{Another Child Ill?}) + b_4(\text{HIV Status}) + b_5(\text{Illness Management}) + \\ & b_6(\text{Family Support}) + b_7(\text{HIV Status} * \text{Family Support}) + b_8(\text{Illness Management} \\ & * \text{Family Support}) \end{aligned}$$

Similar regression equations were created for each combination of conditioning variable and stressor, with six total regression equations. Each of the six equations were subsequently used to estimate the two dependent variables, stress and arousal, resulting in 12 completed regression calculations. The results from each hypothesis is discussed below.

Hypothesis 3.1a: *Controlling for personal factors, the level of support from family will significantly buffer the effects of the stressor upon caregiver stress levels.*

Results 3.1a: Family support impacted the dependent variable in the hypothesized direction. However, the addition of family support and its corresponding interaction terms, as shown in Table 23, actually decreased the amount of variance explained 1.2%. As such, neither family support nor the interactions were significant predictors of the level of caregiver stress, with coefficients equal to, or almost equal to, zero. The overall model remained significant, although only one variable, Caregiver's Health Limits, was a statistically significant predictor. Therefore, the null hypothesis cannot be rejected.

Table 23: Main and Interaction Effects for Family Support upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	13.4***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.10	.07	.15	
Another Child Ill?	.04	.15	.82	
Stressors				
HIV Status	-.07	.13	.57	
Illness Management	.03	.03	.23	
Social Support Source				
Family Support	-.00	.06	.99	
Constant	2.07	.05	.00	12.6***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.10	.07	.17	
Another Child Ill?	.03	.15	.83	
Stressors				
HIV Status	-.07	.13	.99	
Illness Management	.03	.03	.72	
Social Support Source				
Family Support	-.00	.06	.86	
Interaction Effect				
Family Support * HIV Status	-.02	.13	.85	
Family Support * Illness Management	.00	.03	.97	
NOTE: Model Significance *= $p < .05$; **= $p < .01$; ***= $p < .001$				

Hypothesis 3.1b: *Controlling for personal factors, the level of support from family will significantly buffer the effects of the stressor upon caregiver arousal levels.*

Results 3.1b: The hypothesized direction of the conditioning variable on the dependent variable was as hypothesized. However, family support was not a significant predictor of caregiver arousal levels, nor were the corresponding interactions. Thus, no buffering effect was found. The final regression had an adjusted R^2 of 19.6% (as listed in

Table 24), which was a reduction of .6% from its previous form. Caregiver Health Limits and Another Child Ill both remained significant within this equation. The null hypothesis cannot be rejected.

Table 24: Main and Interaction Effects for Family Support upon the Dependent Variable 'Arousal'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
<i>Constant</i>	2.94	.05	.00	20.1***
<i>Personal Factors</i>				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	.02	.06	.65	
Another Child Ill?	.36	.14	.01	
<i>Stressors</i>				
HIV Status	-.08	.12	.48	
Illness Management	-.03	.03	.22	
<i>Social Support Source</i>				
Family Support	.04	.05	.40	
<i>Constant</i>	2.94	.05	.00	19.6***
<i>Personal Factors</i>				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	.02	.06	.72	
Another Child Ill?	.35	.14	.01	
<i>Stressors</i>				
HIV Status	-.08	.12	.57	
Illness Management	-.03	.03	.33	
<i>Social Support Source</i>				
Family Support	.05	.05	.66	
<i>Interaction Effect</i>				
Family Support * HIV Status	.04	.12	.71	
Family Support * Illness Management	.02	.03	.52	
NOTE: Model Significance *=$p < .05$; **=$p < .01$; ***=$p < .001$				

Hypothesis 3.2a: *Controlling for personal factors, the level of support from friends will significantly buffer the effects of the stressor upon caregiver stress levels.*

Results 3.2a: Within the regression equation, support from friends did not significantly predict caregiver stress levels. Although, as shown in Table 25, support from friends did impact the dependent variable in the hypothesized direction. The addition of the interaction terms reduced the adjusted R^2 .8%, with neither term approaching significance. Lastly, although the overall model remained significant, only Caregiver Health Limits maintained significance. Therefore, the null hypothesis cannot be rejected.

Table 25: Main and Interaction Effects for Friend Support upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	13.8***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.09	.07	.23	
Another Child Ill?	.04	.15	.80	
Stressors				
HIV Status	-.05	.13	.68	
Illness Management	.03	.03	.25	
Social Support Source				
Friend Support	-.03	.03	.32	
Constant	2.06	.05	.00	13.0***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.09	.07	.22	
Another Child Ill?	.04	.15	.80	
Stressors				
HIV Status	-.05	.13	.75	
Illness Management	.03	.03	.64	
Social Support Source				
Friend Support	-.03	.03	.63	
Interaction Effect				
Friend Support * HIV Status	.01	.07	.86	
Friend Support * Illness Management	-.07	.02	.96	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

Hypothesis 3.2b: *Controlling for personal factors, the level of support from friends will significantly buffer the effects of the stressor upon caregiver arousal levels.*

Results 3.2b: Table 26 shows the significant main impact of Friend Support upon the caregiver's level of arousal. In addition, there was a significant change within the overall model as demonstrated in the change in adjusted R² from 20.2% to 25.4% (f=13.951; p<.001). Although neither of the multiplicative interaction terms were

significant, one, the interaction of Friend Support and HIV Status, was nearing significance with a p-value of .09. Support from friends also impacted the dependent variable in the hypothesized direction. Two other terms remained significant in the regression equation – Caregiver Health Limits and Another Child Ill. Although the main effect was significant, the hypothesized buffering effect was not supported. Therefore, the null hypothesis cannot be rejected.

Table 26: Main and Interaction Effects for Friend Support upon the Dependent Variable 'Arousal'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.94	.05	.00	24.9***
Personal Factors				
Caregiver's Health Limits	-.23	.03	.00	
Educational Level	-.02	.06	.81	
Another Child Ill?	.36	.13	.01	
Stressors				
HIV Status	-.15	.11	.20	
Illness Management	-.03	.03	.28	
Social Support Source				
Friend Support	.10	.03	.00	
Constant	2.95	.05	.00	25.4***
Personal Factors				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	-.00	.06	.94	
Another Child Ill?	.37	.13	.01	
Stressors				
HIV Status	-.14	.12	.33	
Illness Management	-.03	.03	.51	
Social Support Source				
Friend Support	.09	.03	.00	
Interaction Effect				
Friend Support * HIV Status	-.10	.06	.09	
Friend Support * Illness Management	.00	.01	.84	
NOTE: Model Significance *=$p < .05$; **=$p < .01$; ***=$p < .001$				

Hypothesis 3.3a: *Controlling for personal factors, the level of support from children will significantly buffer the effects of the stressor upon caregiver stress levels.*

Results 3.3a: The addition of the main and interaction effects increased the adjusted R^2 from 13.8% to 14.7%, although the change was not statistically significant. In the final equation, as shown in Table 27, support was close to significant with a p-value of .09. Neither of the interaction terms were significant, although all terms in the regression were affecting the dependent variable in the desired direction. Caregiver Health Limits remained significant for all models. Thus, as no interaction were noted, the null hypothesis cannot be rejected.

Table 27: Main and Interaction Effects for Child Support upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	13.5***
Personal Factors				
Caregiver's Health Limits	.19	.04	.00	
Educational Level	-.10	.07	.15	
Another Child Ill?	.03	.15	.85	
Stressors				
HIV Status	-.08	.13	.53	
Illness Management	.04	.03	.22	
Social Support Source				
Child Support	-.02	.04	.55	
Constant	2.07	.05	.68	14.7***
Personal Factors				
Caregiver's Health Limits	.18	.04	.00	
Educational Level	-.08	.07	.24	
Another Child Ill?	.04	.15	.80	
Stressors				
HIV Status	-.09	.13	.24	
Illness Management	.04	.03	.36	
Social Support Source				
Child Support	-.03	.04	.09	
Interaction Effect				
Child Support * HIV Status	-.11	.08	.19	
Child Support * Illness Management	-.02	.02	.47	
NOTE: Model Significance *= $p < .05$; **= $p < .01$; ***= $p < .001$				

Hypothesis 3.3b: *Controlling for personal factors, the level of support from children will significantly buffer the effects of the stressor upon caregiver arousal levels.*

Results 3.3b: Table 28 shows the significant impact of several predictor variable upon the caregiver's level of arousal, including Caregiver Health Limits, Another Child Ill, Illness Management, and the interaction between Illness Management and Child Support. In addition, there was a significant change within the overall model as

demonstrated in the change in adjusted R^2 from 20.2% to 22.5% ($f=3.879$; $p<.022$).

Although one of the multiplicative interaction terms was not significant, the interaction of between Illness Management and Child Support was statistically significance with a p-value of .01. Although the main effect was non-significant, the hypothesized buffering effect was supported for one of the stressor. Therefore, the buffering effect of Child Support on Illness Management and Child Support can be supported and the null hypothesis can be rejected. However, the buffering effect of Child Support on HIV Status was not supported and the null hypothesis for that term cannot be rejected.

Table 28: Main and Interaction Effects for Child Support upon the Dependent Variable 'Arousal'				
<i>Dependent Variable – Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.94	.05	.00	20.3***
Personal Factors				
Caregiver's Health Limits	-.23	.03	.00	
Educational Level	.03	.06	.62	
Another Child Ill?	.38	.14	.01	
Stressors				
HIV Status	-.07	.12	.55	
Illness Management	-.04	.03	.18	
Social Support Source				
Child Support	.04	.03	.24	
Constant	2.93	.05	.00	22.5***
Personal Factors				
Caregiver's Health Limits	-.24	.04	.00	
Educational Level	.03	.06	.58	
Another Child Ill?	.42	.14	.00	
Stressors				
HIV Status	-.06	.11	.24	
Illness Management	-.04	.03	.00	
Social Support Source				
Child Support	.05	.03	.82	
Interaction Effect				
Child Support * HIV Status	-.10	.07	.19	
Child Support * Illness Management	.05	.02	.01	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

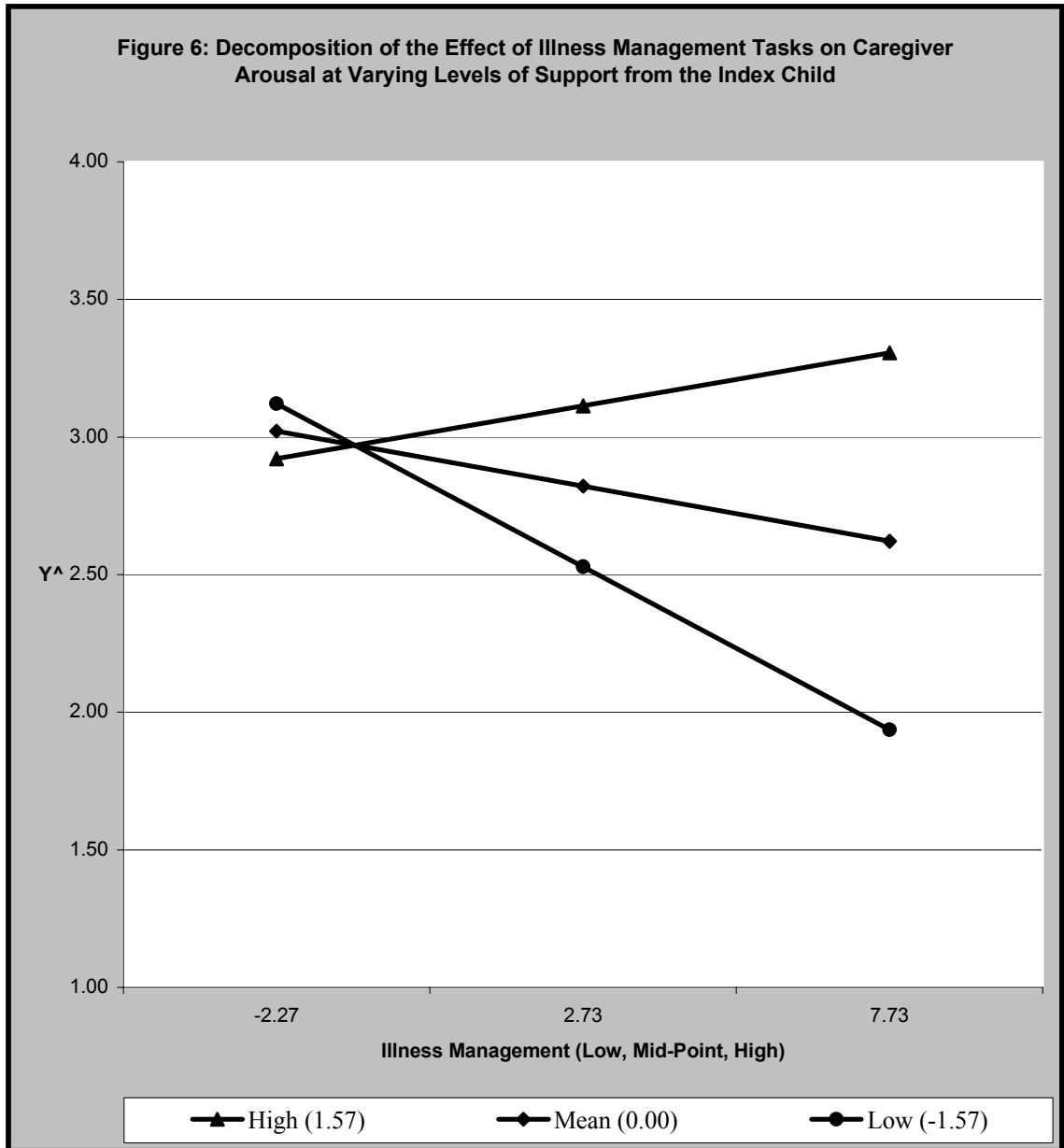
Due to the rejection of the null hypothesis and significance of the interaction term, the interaction between the conditioning variable, Child Support, and the stressor, Illness Management, will be decomposed. This is done to determine the significance of the slope of Child Support on levels of caregiver arousal at low, mid and high levels of Illness Management. Low and high levels of Child Support were obtained, utilizing Cohen and Cohen's (1983, as cited in Aiken & West, 1991) suggestion of amounts one standard deviation below (-1.57) and above (1.57) the mean centered score (with the

mean equal to zero). As such, in keeping with Cohen and Cohen's (1983, as cited in Aiken & West) guidelines for decomposing the interaction, the following equation was utilized:³

$$\text{Predicted Arousal Level} = ((b_5 + b_8(\text{Child Support})) * \text{Illness Management}) + (b_6(\text{Child Support}) + b_0)$$

Figure 6 below displays the slopes from these three scenarios. The slope of Illness Management on caregiver arousal level was significantly different from zero at low levels of Child Support ($b = -.119$, $SE = .043$, $p < .01$), with a decrease in caregiver arousal levels of 1.18 from low to high levels of Illness Management. However, the slope of Illness Management on caregiver arousal level was not significantly different from zero at either the mean or high levels of Child Support ($b = -.040$, $SE = .026$, $p > .01$; $b = .039$, $SE = .039$, $p > .01$, respectively). Those individuals with no reported Child Support showed a decrease of .47 in their arousal level, while caregivers with high levels of child support increased their arousal levels .39 points across the Illness Management spectrum. Finally, the sign of the significant coefficient indicates that a lower level of arousal is associated with caregivers having a high amount of illness management tasks, yet little to no support from the index child.

³ For this analysis the variables not under investigation were removed from the equation, essentially setting them to zero.



Hypothesis 3.4a: *Controlling for personal factors, the level of connection to the community will significantly buffer the effects of the stressor upon caregiver stress levels.*

Results 3.4a: Connections within the community did not significantly predict caregiver stress levels. Although, as shown in Table 29, the conditioning variable did impact the dependent variable in the hypothesized direction. However, the addition of the interaction terms reduced the adjusted R^2 .8%, with neither term approaching significance. Lastly, although the overall model remained significant, only Caregiver Health Limits maintained significance. Therefore, the null hypothesis cannot be rejected.

Table 29: Main and Interaction Effects for Community Connections upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	13.8***
Personal Factors				
Caregiver's Health Limits	.19	.04	.00	
Educational Level	-.10	.07	.15	
Another Child Ill?	.06	.15	.71	
Stressors				
HIV Status	-.09	.13	.49	
Illness Management	.04	.03	.22	
Social Support Source				
Community Connections	-.03	.03	.32	
Constant	2.07	.05	.00	13.0***
Personal Factors				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.10	.07	.16	
Another Child Ill?	.05	.15	.73	
Stressors				
HIV Status	-.09	.13	.67	
Illness Management	.04	.03	.64	
Social Support Source				
Community Connections	-.03	.03	.62	
Interaction Effect				
Community Connections * HIV Status	.01	.06	.92	
Community Connections * Illness Management	.00	.01	.90	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

Hypothesis 3.4b: *Controlling for personal factors, the level of connection to the community will significantly buffer the effects of the stressor upon caregiver arousal levels.*

Results 3.4b: The hypothesized moderator, Community Connections, did not significantly predict caregiver arousal levels, although the conditioning variable did impact the dependent variable in the hypothesized direction. In addition, as shown in

Table 30, the interaction terms increased the adjusted R^2 slightly, yet neither term approached significance. The overall model remained significant, with Caregiver Health Limits, Another Child Ill, and Illness Management reaching statistical significance. Nevertheless, the null hypothesis cannot be rejected.

Table 30: Main and Interaction Effects for Community Connections upon the Dependent Variable 'Arousal'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
<i>Constant</i>	2.94	.05	.00	20.0***
<i>Personal Factors</i>				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	.03	.06	.60	
Another Child Ill?	.39	.14	.01	
<i>Stressors</i>				
HIV Status	-.09	.12	.42	
Illness Management	-.03	.03	.22	
<i>Social Support Source</i>				
Community Connections	-.02	.02	.43	
<i>Constant</i>	2.94	.05	.00	20.6***
<i>Personal Factors</i>				
Caregiver's Health Limits	-.24	.03	.00	
Educational Level	.04	.06	.52	
Another Child Ill?	.37	.14	.01	
<i>Stressors</i>				
HIV Status	-.09	.12	.66	
Illness Management	-.04	.03	.04	
<i>Social Support Source</i>				
Community Connections	-.02	.02	.19	
<i>Interaction Effect</i>				
Community Connections * HIV Status	.01	.05	.88	
Community Connections * Illness Management	.02	.01	.11	

NOTE: Model Significance *= $p < .05$; **= $p < .01$; ***= $p < .001$

Hypothesis 3.5a: *Controlling for personal factors, the level of support from church/spirituality will significantly buffer the effects of the stressor upon caregiver stress levels.*

Results 3.5a: Table 31 shows the addition of Church/Spiritual Support and its corresponding interaction terms to the regression equation. Although there was an .4% increase in the adjusted R^2 , the change was not significant. Both of the multiplicative interaction terms, as well as the main effect of the conditioning variable, were not significant. Church/Spiritual Support did impact the dependent variable in the hypothesized direction. Only one item was significant in the regression equation, Caregiver Health Limits; therefore, the null hypothesis cannot be rejected.

Table 31: Main and Interaction Effects for Church/Spiritual Support upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.07	.05	.00	14.3***
Personal Factors				
Caregiver's Health Limits	.18	.04	.00	
Educational Level	-.08	.07	.26	
Another Child Ill?	.06	.15	.69	
Stressors				
HIV Status	-.11	.13	.41	
Illness Management	.04	.03	.21	
Social Support Source				
Church/Spiritual Support	-.05	.04	.14	
Constant	2.06	.05	.00	14.2***
Personal Factors				
Caregiver's Health Limits	.18	.04	.00	
Educational Level	-.08	.07	.27	
Another Child Ill?	.06	.15	.67	
Stressors				
HIV Status	-.12	.13	.88	
Illness Management	.04	.03	.17	
Social Support Source				
Church/Spiritual Support	-.05	.04	.72	
Interaction Effect				
Church/Spiritual Support * HIV Status	-.02	.08	.83	
Church/Spiritual Support * Illness Management	-.02	.02	.31	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

Hypothesis 3.5b: Controlling for personal factors, the level of support from church/spirituality will significantly buffer the effects of the stressor upon caregiver arousal levels.

Results 3.5b: Church/Spiritual Support, as illustrated in Table 32, shows a significant main impact upon the caregiver's level of arousal prior to the addition of the interaction terms. However, its significance is lost with the inclusion of the

multiplicative factors. In addition, there was a significant change within the overall model with the addition of the main effect only, as demonstrated in the change in adjusted R^2 from 20.2% to 23.6% between ($f=10.276$; $p<.002$). The adjusted R^2 is reduced .6% with the introduction of the interaction variables. Neither of the multiplicative interaction terms were significant. The conditioning variable impacted the dependent variable in the hypothesized direction. Two other terms remained significant in the regression equation – Caregiver Health Limits and Another Child Ill. Although the main effect was significant, the hypothesized buffering effect was not supported. Therefore, the null hypothesis cannot be rejected.

Table 32: Main and Interaction Effects for Church/Spiritual Support upon the Dependent Variable 'Arousal'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.94	.05	.00	23.6***
Personal Factors				
Caregiver's Health Limits	-.21	.03	.00	
Educational Level	-.01	.06	.90	
Another Child Ill?	.32	.13	.02	
Stressors				
HIV Status	-.02	.12	.88	
Illness Management	-.04	.03	.17	
Social Support Source				
Church/Spiritual Support	.11	.03	.00	
Constant	2.93	.05	.00	23.0***
Personal Factors				
Caregiver's Health Limits	-.21	.03	.00	
Educational Level	-.01	.06	.93	
Another Child Ill?	.33	.14	.02	
Stressors				
HIV Status	-.02	.12	.62	
Illness Management	-.04	.03	.52	
Social Support Source				
Church/Spiritual Support	.11	.03	.12	
Interaction Effect				
Church/Spiritual Support * HIV Status	-.04	.07	.55	
Church/Spiritual Support * Illness Management	.00	.02	.84	
NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001				

Hypothesis 3.6a: Controlling for personal factors, the level of formal service supports will significantly buffer the effects of the stressor upon caregiver stress levels.

Results 3.6a: The effect of Formal Service Support upon caregiver stress, as listed in Table 33, was not significant. Neither of the multiplicative interaction terms were not significant. In addition, there was an .7% decrease in the adjusted R², although

the change was not significant. Formal Service Support did not impact the dependent variable in the hypothesized direction; however, the coefficient was almost equal to zero with little impact evident. Only one item was significant in the regression equation, Caregiver Health Limits; therefore, the null hypothesis cannot be rejected.

Table 33: Main and Interaction Effects for Formal Service Support upon the Dependent Variable 'Stress'				
<i>Dependent Variable - Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
<i>Constant</i>	2.07	.05	.00	13.4***
<i>Personal Factors</i>				
Caregiver's Health Limits	.20	.04	.00	
Educational Level	-.10	.07	.15	
Another Child Ill?	.03	.15	.82	
<i>Stressors</i>				
HIV Status	-.07	.13	.57	
Illness Management	.04	.03	.23	
<i>Social Support Source</i>				
Formal Service Support	-.00	.07	.95	
<i>Constant</i>	2.06	.05	.09	13.1***
<i>Personal Factors</i>				
Caregiver's Health Limits	.19	.04	.00	
Educational Level	-.09	.07	.19	
Another Child Ill?	.04	.15	.78	
<i>Stressors</i>				
HIV Status	-.08	.13	.37	
Illness Management	.04	.03	.89	
<i>Social Support Source</i>				
Formal Service Support	.01	.07	.28	
<i>Interaction Effect</i>				
Formal Service Support * HIV Status	-.17	.16	.28	
Formal Service Support * Illness Management	.01	.04	.84	

NOTE: Model Significance *=p<.05; **=p<.01; ***=p<.001

Hypothesis 3.6b: *Controlling for personal factors, the level of formal service supports will significantly buffer the effects of the stressor upon caregiver arousal levels.*

Results 3.6b: Formal Service Support, as identified in Table 34, shows a significant main impact upon the caregiver's level of arousal prior to the addition of the interaction terms. However, its significance is lost with the inclusion of the multiplicative factors. In addition, the interaction term, Formal Service Support * Illness Management, is approaching significance. In addition, there was a significant change within the overall model with the addition of the main effect, as demonstrated in the change in adjusted R^2 from 20.2% to 21.3% ($f=4.003$; $p<.047$), with an additional .9% added with the insertion of the interaction variables. The conditioning variable also impacted the dependent variable in the hypothesized direction. Three other terms remained significant in the regression equation – Caregiver Health Limits, Another Child Ill, and Illness Management. Although the main effect was significant, the hypothesized buffering effect was not supported. Therefore, the null hypothesis cannot be rejected.

Table 34: Main and Interaction Effects for Formal Service Support upon the Dependent Variable 'Arousal'				
<i>Dependent Variable – Predictors</i>	β	<i>SE</i>	<i>p-value</i>	<i>Adj. R²</i>
Constant	2.94	.05	.00	21.3***
Personal Factors				
Caregiver's Health Limits	-.25	.03	.00	
Educational Level	.03	.06	.61	
Another Child Ill?	.38	.14	.01	
Stressors				
HIV Status	-.11	.12	.33	
Illness Management	-.03	.03	.27	
Social Support Source				
Formal Service Support	-.12	.06	.05	
Constant	2.93	.05	.00	22.2***
Personal Factors				
Caregiver's Health Limits	-.25	.03	.00	
Educational Level	.04	.06	.56	
Another Child Ill?	.39	.14	.00	
Stressors				
HIV Status	-.12	.12	.99	
Illness Management	-.04	.03	.04	
Social Support Source				
Formal Service Support	-.12	.06	.20	
Interaction Effect				
Formal Service Support * HIV Status	-.04	.14	.78	
Formal Service Support * Illness Management	.06	.03	.06	

NOTE: Model Significance *= $p < .05$; **= $p < .01$; ***= $p < .001$

Summary of Findings

The data presented in this chapter helps to illuminate many of the characteristics of individuals caring for children infected and/or affected by HIV/AIDS. The answers found to the questions posited also assist in highlighting the impact of various social support sources upon caregivers perceived level of stress and arousal.

Some of the major findings include that the majority of individuals in this study's sample are birth mothers working to maintain their families under difficult situations.

Many caregivers, birth and other, are in poor health, with some also caring for other sick children as well. However, birth mothers, as a group, have more health difficulties that place limits on their activities in the home, lower formal education, less support from their family, friends, and church/spirituality than their counterparts. Yet, it was also found that others provide care for significantly more HIV positive children, as well as more other ill children. There were no statistical differences between birth mothers and other caregivers on a number of factors such as the amount of illness management tasks, amount of support from the index child, connections with the community, and formal service support. Lastly, birth mothers reported more perceived stress and less arousal than did other caregivers.

All of the hypothesized regression model explained a significant amount of the variance, ranging from 12.6% to 25.4%. The models appeared to estimate the caregiver's level of arousal more accurately than their level of stress, with adjusted R^2 from each ranging 19.5% to 25.4% and 12.6% to 14.7%, respectively. The most consistently significant variable in the regression equations was Caregiver Health Limits, with several social support variables also showing significance. However, only one, Child Support, demonstrated a significant interaction effect. These findings will be explored further in Chapter 6, where the results will be scrutinized for their potential influence on theory, practice, policy and research.