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Health Risk Behavior in Foster Youth

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Abstract

Problem—Adolescent health problems are predominantly caused by risk behavior. Foster adolescents have disproportionately poor health; therefore identification of risk behavior is critical.

Method—A secondary analysis of data from a larger study investigated the health risk behavior of 56 foster youth using the CHIP-AE.

Findings—Foster youth had some increased risk behavior. Younger adolescents and those in kinship care had less risky behavior. Youth had more risk behavior when: in group homes, parental death, histories of physical or emotional abuse, or history of attempted suicide.

Conclusions—These results point to areas of strength and vulnerability in foster youth.

Keywords

foster care; adolescent health; adolescent risk taking; health risk behavior; Child Health and Illness Profile-Adolescent Edition (CHIP-AE)

Adolescence is generally a time of good health. Volitional health risk behaviors, such as substance use and sexual activity, contribute to the main causes of morbidity and mortality in this age group. Social contexts, including family and school, influence adolescent health risk behavior (Grumbaum et al., 2003; Resnick et al., 1997), but little is known about these behaviors in those who reside in foster care. This descriptive study examined areas of

strength and vulnerability in an urban foster youth population. The purpose of this study was to compare health risk behaviors of foster youth with a standardized adolescent sample. A second goal of this research was to examine foster youths' health risk behaviors for various demographic characteristics.

This paper will review the state of foster youth and literature on their health risk behavior, and present findings from a secondary analysis of data from a larger randomized control study. Findings will be used to propose nursing interventions and clinical practices with the foster youth population to prevent risk and promote health.

Background and Significance

Adolescents in foster care, ages 10–19, have a higher prevalence of poor health status than non-foster youth, including acute conditions, chronic illnesses and poor nutritional status, (Jee & Simms, 2006; Schneiderman, 2003). More than 50% of morbidity and mortality in adolescence is attributable to health risk behavior that leads to negative health outcomes (Irwin, Burg, & Cart, 2002).

Adolescents in Foster Care

An estimated 45% of the 513,000 children in the U. S. foster care system are adolescents (U. S. Department of Health and Human Services, 2006). Youth are removed from their biological families for a variety of reasons, including: physical abuse (12–25%), neglect (50–75%), sexual abuse (2–9%), abandonment (9–35%) and parents who were incarcerated or unable to provide care (15 to 30%) (Carpenter, Clyman, Davidson, & Steiner, 2001).

Type of placement directly impacts a young person's experience in foster care. It is important to note that group home environments differ significantly from other foster care settings. The youth in group homes may have been placed there due to significant treatment needs such as behavioral or mental health problems (LAO, 2005). Group home youth usually have more risk-taking behavior (Altshuler & Poertner, 2002).

Access to health care for foster youth is becoming increasingly fragmented and sporadic. Studies have shown that even if a full exam was completed on a child upon intake into the foster care system, most appropriate follow up care did not occur (Kools & Kennedy, 2003). The U. S. General Accounting Office (1995) found that 12% of children in foster care received no regular health care and that 34% had not been immunized. Youth in foster care often have a different provider after each placement change and acute health care issues dominate (Kools & Kennedy, 2003).

Health Risk Behavior

Over the last 10 years, adolescent health risk behaviors that are improving in the national population are injury-related behavior and unsafe sexual behavior. Poor nutrition, inadequate physical activity and tobacco use have stayed the same and illicit drug use, alcohol use and violence have increased. Health risk behaviors have been consistent across all racial groups and have led to morbidity in all systems of the body (Irwin et al., 2002).

Twenty-eight percent of youth in the community actively engage in multiple health risk behaviors, while 72% engage in one health risk behavior or do not engage in any risk-related behaviors (Irwin et al., 2002). Given both the prevalence of health risk behavior in adolescents and the high rates of morbidity and mortality in foster adolescents compared with other adolescents, there is a critical need to identify risk behavior in foster youth.

Foster Youth Health Risk Behavior

Foster youth health risk behavior was reviewed using PubMed and PsycINFO databases. Studies included research on sexual risk behavior and antecedent factors, predictors of risk behavior, behavioral health outcomes in youth reunited with family and risk behaviors in youth residing in group homes.

In a cross-sectional retrospective study of women who participated in the National Survey of Family Growth (n=10,847), their out of home placement histories and sexual behaviors were reviewed (Carpenter et al., 2001). Women in foster care had their first pregnancy at a younger age and more sexual partners than the non-foster population. Women with a history of kinship care had a 12-month earlier age of sexual debut compared with the non-foster population and a younger age of first conception by 22.8 months compared to the non-foster care women.

Taussig (2002) completed a six-year longitudinal prospective study on 110 foster children ages 7–12 years old to evaluate protective and vulnerability factors in their risk behavior. Significant correlations ($p < .05$) were found for several variables. Age was positively correlated with substance use, sexual behavior and overall risk behaviors. A history of physical abuse or neglect predicted more delinquency and substance use. Parent and teacher support were negatively correlated with sexual behavior, while classmate support was negatively correlated with self-destructive behaviors. Social acceptance was positively associated with substance use and sexual behavior, whereas physical appearance was negatively associated with sexual behaviors. This study begins to illuminate the risk behavior of early adolescents in foster care.

Another longitudinal analysis derived from the same population of foster youth examined behavioral health outcomes in children who were reunified with their families compared to those who remained in foster care. Reunified teens had a higher incidence ($p < .05$) of self-destructive behavior, substance use, school drop-out rates, low grades, ticket and arrest rates, internalizing behavior problems and overall risk behaviors. The two groups of young people did not differ in sexual behavior, externalizing behaviors, pregnancy, or school suspensions (Taussig, Clyman, & Landsverk, 2001).

Altschuler and Poertner (2002) used the Child Health and Illness Profile-Adolescent Edition (CHIP-AE) instrument to assess group home foster youth health. Individual risks such as smoking, illegal substance use, safety practices and sexual activity were higher than the standardized sample. Threats to achievement such as lying, cheating, stealing, disobeying at school and violent behavior were also higher. Group home youth had more peers with risky behaviors.

These studies all found significant trends in risk-taking behaviors of children in foster care. Although varying in their generalizability, study designs and populations, there is a pattern of increased risk-taking in the foster population. These studies included younger children or excluded important foster care settings such as group homes. The goal of this descriptive study was to identify health risk behavior, specifically in adolescents in diverse foster care settings.

Methods

Sample and Setting

The health risk behaviors of foster adolescents were examined using secondary data analysis from the “Improving Health and Development of Foster Adolescents” Study, funded by the National Institute of Nursing Research. This randomized control trial in process is

measuring the effect of a nurse intervention to promote the health of adolescents in foster care. Subjects from this urban population were recruited from Court-Appointed Special Advocate Programs (CASA) in the San Francisco Bay Area. The sample for this descriptive study was adolescents, ages 11–17 who had completed baseline measures in the larger study.

Instruments

The Demographics Form collected information such as birth date, gender and race/ethnicity. Placement history was also collected, including age at first placement, total number of placements, length of time in foster care and reasons for first placement.

The Child Health and Illness Profile-Adolescent Edition (CHIP-AE) is a self-administered tool that is designed to assess the health of youth ages 11–17. In the development and testing of the CHIP-AE, it was consistently found that adolescents were more accurate, reliable and valid in reporting their own health than the proxy reports of caregivers or teachers. The CHIP-AE was standardized on ethnically, socioeconomically and regionally diverse schools and acute and chronic illness samples. The rigorous testing resulted in good psychometric properties. A modification to the CHIP-AE for this study was to clarify the term “family” by adding “foster” to the term “family” in seven items and one instruction.

The CHIP-AE has six domains of health including: discomfort, disorder, satisfaction with health, resilience, achievement and risks (Starfield, Riley, Green, Ensminger, Forrest & Robertson, 1999). This study examined the domain of risk and its three sub-domains: 1) *individual risks*, which examines actions that endanger individual health and development; 2) *threats to achievement*, specifically behaviors that disrupt social development; and 3) *peer influences*, which assesses peer risk-taking behaviors (Riley, Green et al., 1998; Riley, Forest et al.; Starfield et al., 1999). *Peer influences* assesses an adolescent’s perception of their peer’s health risk behavior, not the actual behavior itself. Research has found that adolescents inflate the prevalence of their peers’ risky behavior and this pressures them to engage in activities that are actually less common than they perceive (Dolcini & Adler, 1997).

CHIP-AE scores are normalized to an arbitrary mean of 20 and a standard deviation of five for all sub-domains and domains using the CHIP-AE Standardized Sample. It was assumed that the sub-domains of risk are normally distributed (Starfield et al., 1999). A mean score less than 17 is categorized as poor health, a mean between 17 and 23 is average health and above 23 is excellent health (Starfield et al., 1999).

Data Collection

The Committee on Human Research at the University of California San Francisco approved this secondary data analysis on health risk behaviors in foster youth. No further contact or consent was required of the subjects as these had been obtained in the original study. Informed consent was obtained from the Family Court Judge as the adolescent’s legal representative and informed assent was given by the youth. The CHIP-AE was administered by a Research Assistant (RA), who was also a registered nurse. The instrument was read out loud to the foster youth to allow for all literacy levels. The Demographics Form was completed by the youth’s CASA, a community volunteer who accompanied the youth to the data collection session.

Data Analysis

Data were entered into the database using SPSS 11.0 for Windows statistical package, SPSS Data Entry 3.0 product and the CHIP-AE data entry software. The data were double entered and files matched to ensure accurate data entry. Scoring was completed using the data-entry

software of the CHIP-AE. Data were analyzed using descriptive statistics, specifically: means and standard deviations for the continuous variables and frequencies and percentages for the categorical variables. Categorical variables included gender, ethnicity, reason for placement and type of placement. Continuous variables included age at first placement, number of placements and length of time in foster care.

T-tests were used to compare risk subdomains and the domain of risk of the study sample to the CHIP-AE Standardized Sample. Independent t-tests were used to examine differences within the foster youth group for gender and ethnicity. ANOVA was calculated to compare scores between stages of adolescent development. Significances for the t-tests were compared with non-parametric Mann-Whitney tests. Pearson correlations were calculated with two-tailed significance and included all risk subdomains, years in foster care, number of placements, age at first placement and reason for placement. Frequencies were calculated for the subdomains of individual risks, threats to achievement and peer influences.

Findings

Sample Characteristics

The sample was 56 foster youth. They ranged in age from 11 to 17, (M=14.7 years, SD=1.89 years) with 51.8% of the population female (n=29) and 48.2% male (n=27). The youth identified with the following race or ethnic groups: 64.3% African American (n=36), 21.4% Latino (n=12), 8.9% Asian (n=5), 8.9% Pacific Islander or Hawaiian, 7% Caucasian (n=4) and 3.6% American Indian or Alaskan Native. Nine youth identified as being more than one race or ethnicity. The average age of first placement was 6.31 years old and ranged from placement at birth to new to foster care as a 16 year-old (SD=5.4 years). The average length of time in foster care was 7.26 years, ranging from less than a year to 15 years (SD=5.11 years). These youth had an average of 3.83 placements, but ranged from having one placement since birth to having 23 placements (SD=4.16). Types of placement included 33.9% in relative or kinship placement (n=19), 26.8% in group homes (n=15), 19.6% with foster families (n=11), 10.7% in residential treatment facilities (n=6) and 8.9% in the reunification process (under social services guardianship but living with a biological parent; n=5). These young people experienced multiple reasons for placement, including: 69.6% parental substance use (n=39), 58.9% neglect/abandonment (n=33), 32.1% parental incarceration (n=18), 30.4% physical abuse (n=17), 26.8% emotional abuse (n=15), 19.6% parental mental illness (n=11), 17.9% sexual abuse (n=10) and 5.4% parental death (n=3).

Analysis

A t-test was calculated for each risk subdomain and the overall domain of risk, compared with the CHIP-AE Standardized Sample. Results are shown in Table 1. The overall domain of risk (M=19.32, t=-0.81) was not significantly different from the CHIP-AE Standardized Sample population. Significant differences were found in two sub-domains: individual risk and threats to achievement. The individual risks subdomain (M=23.66, t=4.64, p 0.01) had 95% confidence intervals and classified the youth as in excellent health for these behaviors; that is, having low individual risks. In contrast, the threats to achievement sub-domain score (M=17.53, t=-2.87, p 0.01), also with a 95% confidence interval, indicated a poor level of health behavior, significantly below the CHIP-AE Standardized Sample.

The means of various groups within this foster youth sample were compared by independent sample t-tests and ANOVA were calculated for these groups (see Table 2). Adolescents with a history of physical abuse perceived increased peer risk behaviors (M=12.38, t=-3.75, p 0.01) and overall risk behavior (M=15.48, t=-3.23, p 0.01). Youth with a history of emotional abuse had higher overall risk behavior (M=16.30, t=-2.22, p 0.05) and perceived

more peer risk behavior ($M=13.79$, $t=-2.42$, $p=0.05$). Foster youth in care due to parental death had worse threats to achievement ($M=6.29$, $t=-3.4$, $p=0.01$) and increased overall risk behavior ($M=10.33$, $t=-2.65$, $p=0.05$). Youth in relative placement or kinship care had less individual risk behaviors ($M=26.11$, $t=2.30$, $p=0.05$). There were no significant differences related to other reasons for placement, other types of placement, number of placements, gender or ethnicity in this sample.

ANOVA comparisons were calculated to find differences between early (ages 10–13), middle (ages 14–16) and late (ages 17–19) adolescent developmental groups and differences were found to be significant for overall risks ($F_{(2,53)}=5.484$, $p=.007$), individual risks ($F_{(2,53)}=13.885$, $p=.000$) and peer influences ($F_{(2,53)}=6.814$, $p=.002$). Post Hoc tests were completed using the Bonferroni criteria and indicated that early adolescents had significantly fewer risk behaviors than both middle ($I-J=4.31$, $p=.05$) and late ($I-J=7.20$, $p=.05$) adolescents in the overall domain of risk (the composite of individual risks, threats to achievement and peer influences). Early adolescents had significantly fewer individual risk behaviors than middle adolescents ($I-J=4.41$, $p=.05$) and late adolescents ($I-J=10.54$, $p=.05$). Middle adolescents also had less individual risk behaviors than late adolescents ($I-J=6.13$, $p=.05$). Peer influences on risk were significantly lower in early adolescents than late adolescents ($I-J=11.27$, $p=.05$). No significant differences were found between the age groups for threats to achievement.

Correlations were examined between demographic and placement characteristics. A history of aggressive behavior was negatively correlated with the overall domain of risk ($r=-.312$, $p=.05$), individual risks ($r=-.265$, $p=.05$) and threats to achievement ($r=-.386$, $p=.01$). A history of suicidal threats or attempts was negatively correlated with individual risks ($r=-.271$, $p=.05$) and threats to achievement ($r=-.362$, $p=.01$). Group home placement was negatively correlated with overall risk ($r=-.340$, $p=.05$) and threats to achievement ($r=-.298$, $p=.05$). There were no correlations between other reasons for placement (e.g., parent mental illness, parental substance use, parental incarceration, neglect, or sexual abuse), placement history (number of placements, age at first placement), type of placement, services (welfare checks, food stamps, reduced cost school lunch), or risk behavior.

The frequencies of foster youths' perceptions of peer behavior (Appendix A), foster youth threats to achievement (Appendix B and C) and their individual risk behavior (Appendix D) were examined. Foster youth perceived that their peers were: 57.1% having sex ($n=32$), 53.6% smoking marijuana ($n=30$), 47.3% drinking alcohol ($n=26$) and 44.6% smoking cigarettes ($n=25$). Youth reported they had trouble: 53.6% concentrating in school ($n=30$), 48.2% getting school work done ($n=27$), 48.2% getting along with a teacher ($n=27$) and 41.9% had disobeyed at school ($n=23$). Within the last two years, 42.9% had been suspended or expelled from school ($n=24$). Sixty-four percent argued a lot ($n=36$), 30.4% stole ($n=17$), 32.1% carried a weapon ($n=18$), 44.6% had run away ($n=25$) and 41.1% threatened to hurt someone ($n=23$).

Close to half of the foster youth were sexually active (42.9%, $n=24$). Of those who reported having sex, 16.7% reported not using protection ($n=4$) while 83.3% reported using condoms ($n=20$) and/or 8.9% the pill or depo-provera ($n=5$). The age of sexual debut ranged as follows: 20.8% under 13 ($n=5$), 20.8% age 13 ($n=5$) and 37.5% age 14 ($n=9$). Although 30.8% of boys and 9.1% of girls had sexual debut younger than age 13, Kendall's tau-b statistic was not significant between gender and sexual debut ($p=.149$). Same sex partners were reported by 39.1% of these foster youth ($n=9$). Forty-three percent had three or more lifetime partners ($n=10$). Of those who answered the question of ever having been or gotten anyone pregnant, 88.9% reported never ($n=16$), 11.1% did not know ($n=2$), four left the question blank and one refused to answer.

Conclusions

Significant differences in health risk behaviors were identified both within the foster youth sample and between foster youth and the CHIP-AE Standardized Sample. The 'excellent' health rating of foster youth in their individual risk behavior was an encouraging finding. However, when examining the measures within the developmental stages of these youth, the younger teens were the group with low health risk behavior, the middle adolescents were within the range of average health and the late adolescents were taking enough individual risks to classify their health as poor in regard to risk.

This finding could be explained by several factors. From a developmental perspective, older adolescents are expected to demonstrate greater individual risk-taking behavior than younger teens (Maggs, Almeida, & Galambos, 1995), but this remains an encouraging finding for the early and middle adolescents in this vulnerable population of foster youth. Early and middle adolescence would be potentially fruitful intervention points to reinforce positive behaviors and prevent negative forms of risk taking. As this population ages, their risk behaviors increase to a level of high concern, an indicator of poor health. Our findings differ from those of Altshuler and Poertner (2002), who found higher levels of risk in all subdomains. These differences may be accountable to differing study samples. Our sample was younger (mean age=14.4) than Altshuler and Poertner's (mean age=16), thus with an age-appropriate lower level of risk. Additionally, we included youth from multiple placement settings, not only the higher risk group home youth. All of our subjects had an involved mentor, their CASA, which may have reduced their risk-taking (Irwin & Millstein, 1986). Finally, many of the risk questions asked about vehicle use including motorcycles and cars. Most foster youth lack access to vehicles and their scores may reflect a lack of means to the behavior, not necessarily protective decisions on their part.

In contrast to the independent risk factor findings, these youth have reported significant behavior that threatened achievement. The overwhelming majority of these behaviors centered on school behavior. This study population had difficulty concentrating, completing work, following rules and working with their teachers. They reported arguing a lot and lying or cheating. Over 42% of these young people had been suspended or expelled. Another study of foster youth found 73% had been suspended and 16% expelled. (McMillen, Auslander, Elze, White, & Thompson, 2003). Both of these rates are high when compared to another study of community 'high risk' youth that found a suspension rate of 24% (McCord, Klein, Foy, & Fothergill, 1993).

Repeated suspension and expulsion have been found to be associated with higher dropout rates (Martin, Levin, & Saunders, 2000). Higher incidence of school failure, negative peer interactions, conduct disorders, impulsivity and aggression are common results of the trauma and disruption in the lives of foster youth, which could be contributing to this low score (Kools & Kennedy, 2003).

These adolescents perceived their peers to be engaging in multiple health risk behaviors. We know that an adolescent's perception of their peers' health risk behavior is associated with the young person engaging in that behavior (Dolcini & Adler, 1997).

Youth in kinship care had less individual risk behaviors than those in other settings. The mean age of the foster youth in kinship care was 13.6 years, significantly younger than the mean of youth in non-kinship placements (14.7 years, $p < .05$). Lower risk taking may be a factor of developmental stage, but more importantly, placement with familiar family members may be a protective factor in the domain of risk taking. Some studies have found that children in kinship care have better school attendance, less developmental delay and fewer behavior problems (Benedict & White, 1991; Berrick & Barth, 1994). Although lower

risk-taking behavior may be a positive finding at early adolescence, one study reported that foster children who were in kinship care were more likely to use drugs and alcohol and have criminal records as adults than those in other placements (Benedict, Zuravin, & Stallings, 1996). More studies are needed to further understand the impact of kinship care on health and behavior.

Youth residing in group homes had greater overall risk behavior and threats to achievement. Group homes typically include youth with 'difficult' behavior who have 'failed' multiple in-home placements. This high risk finding was supported by Altshuler and Poertner (2002) and underscored the need for this subgroup in foster care to be targeted for risk and harm reduction interventions.

Youth with a history of physical and/or emotional abuse had not only more health risk behavior, but also perceived their peers to be engaging in more risk behaviors. This is similar to the finding in the Taussig (2002) study, where a history of physical abuse was linked to greater delinquency in adolescence. Children who have suffered from physical abuse have been found to have behaviors such as: disobeying; lying; destroying others' belongings; running away from home; and poor school achievement (Youssef, Attia, & Kamel, 1998). The higher rate of risk behavior in youth with a history of emotional abuse was an interesting finding and is an important area for further research.

Foster youth who were in care due to parental death had worse overall risk behaviors and threats to achievement. Research on parental bereavement has found that positive caregiver relationships and high self esteem improved coping. Unfortunately, both of these characteristics are often lacking in foster youth (Lin, Sandler, Ayers, Wolchik & Luecken, 2004; Wolchik, Tein, Sandler, & Ayers, 2006). Youth with aggressive behavior had more overall risk, individual risk and threats to achievement behaviors. Taussig (2002) also found that youth who perceived their behavior to be problematic had more risk behaviors six years later (Taussig, 2002). Those with a history of suicidal attempt had higher individual risk and threats to achievement behavior. Other research has linked suicidal ideation or attempts with self-destructive behavior (Taussig, 2002), poor school performance (Daniel, Walsh, Goldston, Arnold, Reboussin, & Wood, 2006) and multiple high-risk behaviors (King, Schwab-Stone, Flischer, Greenwald, Kramer, Goodman, Lahey, Shaffer, & Gould, 2001).

Foster youth reported a higher prevalence of being sexually active, an earlier age of sexual debut and a history of more sexual partners than the community population. In 2005, close to 14,000 adolescents completed the Youth Risk Behavior Survey (YRBS), a periodic national measure of adolescent health risk behavior (CDC, 2006). Only 33.9% of this community sample reported being sexually active in contrast to 42.9% in our sample. The contrast between community and foster youth samples is particularly striking in the prevalence of sexual debut before age 13: 9.1 % of the girls and 30.8% of the boys in the foster care sample reported early sexual debut as opposed to only 3.7% of girls and 8.8% of boys in the YRBS sample. Further, 43% of the foster youth had greater than three partners and the YRBS sample reported 14.3% (CDC, 2006). As discussed previously, Carpenter et al. (2001) supported that women who spent time in kinship or foster care were more likely to have earlier sexual debut and to have more sexual partners than non-foster women. They were also more likely to experience earlier pregnancy and parenting (Carpenter et al, 2001).

This study found significant differences between young people in foster care and a standardized sample and between developmental stages for risk behaviors within this foster youth group. The results give us reason to be optimistic that there are positive aspects of health in this population. These strengths could be promoted to reduce later risk behavior. However, these positive findings should be considered carefully. There may be some self-

protective behavior that foster youth, who have been under a great deal of ‘system’ scrutiny, may feel in reporting their behavior honestly. Youth in foster care may also wish to appear “better” in the face of stigmas that they face in the community (Kools, 1997; 1999). They may also feel that others are ‘judging’ their behavior and thus are less likely to report some risk behaviors.

The vulnerabilities of these young people have been clarified with these results, specifically in regard to the importance of personal and placement histories, relationships between teachers and foster youth, difficulty with schoolwork and the presence of peers with negative health behaviors.

Nurses working in collaboration with foster and biological families as well as social agencies are in a unique position to educate young people and their caregivers about risk behaviors and promote risk reduction through education and referral to community resources. Nursing roles that interact with foster youth include public health outreach programs, schools and community clinics, juvenile justice systems and foster care nurses (California Department of Health Services, 1999). Care providers can be sensitive to the lack of continuity in care and make concerted efforts to provide care in an appropriate way, such as extending visit times for youth in the foster care system, having a designated clinician working with all foster youth and making an extra effort to stay in contact with youth through multiple transitions (Kools & Kennedy, 2003). More research on the health and behavior of foster adolescents would guide clinician practice and social policy for better protection and promotion of the health of our foster youth.

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References

- Altshuler SJ, Poertner J. The child health and illness profile-adolescent edition: assessing well-being in group homes or institutions. *Child Welfare*. 2002; 81(3):495–513. [PubMed: 12092670]
- Benedict MI, White RB. Factors associated with foster care length remaining in long-term out-of home care. *Child Welfare*. 1991; 76:285–307.
- Benedict MI, Zuravin S, Stallings RY. Adult functioning of children who lived in kin versus nonrelative family foster care. *Child Welfare*. 1996; 75:529–549. [PubMed: 8795284]
- Berrick JD, Barth RP. Research on kinship foster care: What do we know? Where do we go from here? *Children and Youth Services Review*. 1994; 16:1–5.
- California Department of Health Services, C. S. M. S. B., Child Health and Disability Program. California statewide guidelines for public health nursing in child welfare services. Sacramento, CA: California Department of Health Services; 1999.
- Carpenter SC, Clyman RB, Davidson AJ, Seinger JF. The association of foster care or kinship care with adolescent sexual behavior and first pregnancy. *Pediatrics*. 2001; 108(3)
- Center for Disease Control. Youth Risk Behavior Surveillance—United States, 2005. *Morbidity & Mortality Weekly Report*. 2006; 55(SS-5):1–108. [PubMed: 16410759]
- Daniel SS, Walsh AK, Goldston DB, Arnold EM, Reboussin BA, Wood FB. *Journal of Learning Disabilities*. 2006; 39(6):507–514. [PubMed: 17165618]
- Dolcini, MM.; Adler, NE. Perceived Competencies, Peer Group Affiliation and Risk Behavior Among Early Adolescents. In: Schulenberg, J.; Maggs, J.; Hurrelmann, K., editors. *Health Risks and Developmental Transitions During Adolescence*. Cambridge: Cambridge University Press; 1997. p. 496-506.

- GAO, U. S. G. A. O. Foster care: Health needs of many young children are unknown and unmet; Paper presented at the QAO/HEHS-00-13); Washington, DC. 1995.
- Grunbaum JA, Kann L, Kinchen S, Ross J, Hawkins J, Lowry R, Harris WA, McManus T, Chyen D, Collins J. Youth Risk Behavior Surveillance--United States. *Journal of School Health*. 2003; 74(8):307-324. [PubMed: 15554117]
- Irwin CE Jr, Burg S, Cart C. America's adolescents: Where have we been, where are we going? *Journal of Adolescent Health Care*. 2002; 31:91-121.
- Irwin CE Jr, Millstein SG. Biopsychosocial correlates of risk-taking behaviors during adolescence. Can the physician intervene? *Journal of Adolescent Health Care*. 1986; 7(6 Suppl):82S-96S. [PubMed: 3536822]
- Jee SH, Simms MD. Health and well-being of children in foster care placement. *Pediatrics Review*. 2006; 27(1):34-36.
- King RA, Schwab-Stone M, Flischer AJ, Greenwald JS, Kramer RA, Goodman SH, Lahey BB, Shaffer D, Gould MS. *Journal of American Academic Child Adolescent Psychiatry*. 2001; 40(7): 837-846.
- Kools S. Adolescent identity development in foster care. *Family Relations*. 1997; 46(3):1-9.
- Kools S. Self-protection in adolescents in foster care. *Journal of Child and Adolescent Psychiatric Nursing*. 1999; 12(4):139-152. [PubMed: 10876516]
- Kools S, Kennedy C. Foster child health and development: implications for primary care. *Pediatric Nursing*. 2003; 29(1):39-41. 44-36. [PubMed: 12630505]
- LAO. Children's Services and Foster Care Overview. Retrieved May. 2005; 22:2005.
- Lin KK, Sander IN, Ayers TS, Wolchik SA, Luecken LJ. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33(4):673-683. [PubMed: 15498735]
- Maggs J, Almeida D, Galambos N. Risky business: the paradoxical meaning of problem behavior for young adolescents. *Journal of Early Adolescence*. 1995; 15:339-357.
- Martin MW, Levin S, Saunders R. The association between severity of sanction imposed for violation of tobacco policy and high school dropout rates. *Journal of School Health*. 2000; 70(8):327-330. [PubMed: 11044964]
- McCord MT, Klein JD, Foy JM, Fothergill K. School-based clinic use and school performance. *Journal of Adolescent Health*. 1993; 14(2):91-98. [PubMed: 8476879]
- McMillen C, Auslander V, Elze D, White T, Thompson R. Educational experiences and aspirations of older youth in foster care. *Child Welfare*. 2003; 82(4):475-495. [PubMed: 12875372]
- Resnick MD, Bearman PS, Blum RW, Bauman KE, Harris KM, Jones J, Tabor J, Beuhring T, Sieving RE, Shew M, Ireland M, Bearinger LH, Udry JR. Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*. 1997; 278(10):823-832. [PubMed: 9293990]
- Riley AW, Forrest CB, Starfield B, Green B, Kang M, Ensminger M. Reliability and validity of the adolescent health profile-types. *Medical Care*. 1998; 36(8):1237-1248. [PubMed: 9708595]
- Riley AW, Green BF, Forrest CB, Starfield B, Kang M, Ensminger ME. A taxonomy of adolescent health: development of the adolescent health profile-types. *Medical Care*. 1998; 36(8):1228-1236. [PubMed: 9708594]
- Schneiderman JU. Health issues of children in foster care. *Contemporary Nurse*. 2003; 14(2):123-128. [PubMed: 12785602]
- Starfield, B.; Riley, A.; Green, B.; Ensminger, M.; Forrest, CB.; Robertson, J., et al. *Manual for the Child Health and Illness Profile: Adolescent Edition*. Baltimore: Johns Hopkins University; 1999.
- Taussig HN. Risk behaviors in maltreated youth placed in foster care: a longitudinal study of protective and vulnerability factors. *Child Abuse and Neglect*. 2002; 26(11):1179-1199. [PubMed: 12398855]
- Taussig HN, Clyman RB, Landsverk J. Children who return home from foster care: a 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics*. 2001; 108(1):E10. [PubMed: 11433089]

- Wolchik SA, Tein JY, Sandler IN, Ayers TS. Stressors, quality of the child-caregiver relationship and children's mental health problems after parental death: the mediating role of self-system beliefs. *Journal of Abnormal Psychology*. 2006; 34(2):221–238.
- Youssef R, Attia M, Kamel M. Children experiencing violence. I: Parental use of corporal punishment. *Child Abuse and Neglect*. 1998; 22(10):959–973. [PubMed: 9793719]

Table 1

T-T-Test, Means and Standard Deviations of Sub-domain and Domain Scale Scores of Foster Youth Compared with CHIP-AE Standardized Sample

Measure	Foster Youth		CHIP-AE Standardized Sample		t
	N	Mean SD	n	mean SD	
Sub-domains:					
Individual Risks	56	23.66 5.91	860	20 5	4.64*
Threats to Achievement	56	17.53 6.43	840	20 5	-2.87*
Peer Influences	56	18.02 8.27	848	20 5	-1.79
Domain:					
Risks	56	19.32 6.36	848	20 5	-0.81

Note:

* p 0.01

Table 2

Means and SD for Risk Behavior of Foster Youth

Foster Youth Population	N	Domain: Risks	SD	Individual Risks	SD	Threats to Achievement	SD	Peer Influence	SD
Reason for Placement:									
History of Physical Abuse	17	15.48**	6.0	22.50	5.6	14.94	7.4	12.38**	6.8
History of Emotional Abuse	15	16.30*	6.1	22.50	5.6	15.54	5.5	13.79*	7.6
Parental Death	3	10.33*	6.0	18.15	5.7	6.30**	5.7	14.10	8.4
Type of Placement:									
Kinship	19	21.15	5.5	26.11*	4.5	18.81	5.1	18.92	8.3
Adolescent Development Stage:									
Early (ages 11–13)	24	22.14	6.4	26.95	3.9	18.11	7.0	21.65	7.4
Middle (ages 14–16)	25	17.83	5.6	22.54	5.6	16.36	6.5	16.67	7.9
Late (ages 17–21)	7	14.94	4.6	16.41	5.2	19.73	2.6	10.39	6.2

Note: t-test

* 95% confidence interval, p 0.05,

** 95% confidence interval, p 0.01

Appendix A

Peer Risk Behavior Frequency

Peer Risk Behavior	None (%)	Some (%)	Most (%)	All (%)
Smoke cigarettes	55.4	26.8	12.5	5.5
Drink Alcohol	52.7	21.8	16.4	9.1
Smoke Marijuana	46.4	19.6	19.6	14.3
Use Other Drugs	83.6	9.1	3.6	3.6
Sexual Intercourse	42.9	26.8	16.1	14.3

Appendix B

Frequencies of Lifetime Behavior that Threatens Achievement

Behavior that Threatens Achievement	Never (%)	More than a year ago (%)	In the past year (%)	In the past month (%)	In the past week(%)
Carried a weapon for protection	67.9	7.1	12.5	5.4	7.1
Belonged to a gang	87.5	7.1	1.8	n/a	3.6
Drank hard liquor, mixed drinks	73.2	5.4	8.9	5.4	7.1
Ran away from home	55.4	16.1	14.3	8.9	5.4
Threatened to hurt someone	57.1	10.7	3.6	8.9	19.6
Physically attacked someone	58.9	14.3	16.1	5.4	5.4
Stole something worth > \$10	69.6	12.5	8.9	3.6	5.4
Destroyed something belonging to someone else	57.1	14.3	10.7	10.7	7.1

Appendix C

Frequencies of Recent Behavior that Threatens Achievement

Behavior that Threatens achievement	0 days (%)	1-3 days (%)	4-6 days (%)	7-14 days (%)	15-28 days (%)
Lie or cheat	56.4	12.7	12.7	3.6	14.5
Argue a lot	35.7	23.2	16.1	8.9	16.1
Hang around with others who get into trouble	53.6	16.1	8.9	7.1	14.3
Disobey at school	58.9	19.6	8.9	5.4	7.1
Trouble getting along with teacher	51.8	16.1	8.9	8.9	14.3
Trouble concentrating in school	46.4	21.4	12.5	12.5	7.1
Trouble getting school work done	51.8	19.6	7.1	10.7	10.7

Appendix D

Frequencies of Independent Behavior Risks

Independent Behavior Risks	Never (%)	More than a year ago (%)	In the past year (%)	In the past month (%)	In the past week (%)
Drank beer, wine, wine coolers	64.3	12.5	7.1	7.1	8.9
Smoked cigarettes	75	8.9	3.6	0	12.5
Chewed/dipped tobacco	98.2	1.8	0	0	0
Drank 5 or more drinks in a row	83.9	1.8	5.4	3.6	5.4
Rode a motorbike	78.6	10.7	3.6	3.6	3.6
Wore helmet while riding motorbike	89.1	5.5	3.6	0	1.8
Drove a car	60.7	14.3	8.9	3.6	12.5
Used drugs, alcohol before driving car, motorbike	94.6	0	3.6	0	1.8
Rode a bike	14.3	23.2	25.0	14.3	23.2
Wore helmet when riding bike	54.5	21.8	9.1	7.3	7.3
Used marijuana	60.7	7.1	14.3	7.1	10.7
Injected steroids	100	0	0	0	0
Used inhalants	94.6	1.8	3.6	0	0
Used cocaine	98.2	1.8	0	0	0
Used other illegal drug	96.4	1.8	0	1.8	0