



Published in final edited form as:

Child Youth Serv Rev. 2016 February 1; 61: 1–5. doi:10.1016/j.chilyouth.2015.12.001.

Self-Report of Health Problems and Health Care Use among Maltreated and Comparison Adolescents

Janet U. Schneiderman^a, Sonya Negriff^b, and Penelope K. Trickett^a

Sonya Negriff: negriff@usc.edu; Penelope K. Trickett: penny@usc.edu

^aSchool of Social Work, University of Southern California, 669 West 34th Street, Los Angeles, CA 90089

^bSchool of Social Work, University of Southern California, 1150 S. Olive Street, Suite 360, Room S, Los Angeles, CA, 90089

Abstract

The study aims were to compare maltreated and comparison adolescents' health problems and to identify how individual, family and home characteristics and maltreatment status affect adolescents' self-report of health status and health care use. The sample was 224 maltreated adolescents (mean age = 18.3 years) and 128 comparison adolescents (mean age = 18.15 years). Comparison adolescents reported more cold and pain symptoms during the previous 30 days but no differences in other physical health problems, self-assessment of their physical and mental health or health care use compared to maltreated adolescents. Girls were more likely to have had a dental checkup, to have seen a psychological counselor, and to self-identify their physical health as poor compared to boys. Older adolescents were less likely to have had a medical checkup or seen a psychological counselor than younger adolescents. A history of maltreatment was not related to health or health care disparities for adolescents growing up in the same low-income environment as adolescents without a maltreatment report. The environmental context and geographical location in which these adolescents grew up may be the primary driver in their health behaviors and health problems and not the experience of maltreatment.

Keywords

adolescents; maltreatment; health care; mental health

1. Introduction

Maltreated adolescents experience physical and mental health challenges to a greater degree than their peers. Maltreated adolescents may have been exposed to less supportive environments and more stress, often have complex health care needs, and can have less

Corresponding author: School of Social Work, University of Southern California, 669 W. 34th St., Los Angeles, CA 90089-0411; Tel: 213-821-1338, Fax: 213-821-2088, juschnei@usc.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

family assistance readily available when they are at the age to transition into their role as users of adult health care (Christian & Schwarz, 2011). As adolescents transition to young adulthood, the health challenges they faced during adolescence can affect their ability to engage in self-care, manage chronic illnesses, and access and use health care resources (American Academy of Pediatrics [AAP], 2011). This study compared the health problems and health care use of maltreated versus comparison of adolescents (average age of 18 years) growing up in similar low-income urban environments and identified how their individual, family, and home characteristics were associated with health care use and self-identified health status.

1.1 Maltreated adolescents and health problems

Maltreated children, regardless whether they are in foster care or remain at home, have poorer health than children in the general population. Some of the chronic health conditions prevalent among maltreated children who enter foster care include asthma, skin infections, and obesity (Ringeisen, Casanueva, Urato, & Cross, 2008; Steele & Buchi, 2008). Adolescents who retrospectively report that they have been maltreated have more health risks, including self-reported poor health, depression, and substance use compared to adolescents without maltreatment (Hussey, Chang, & Kotch, 2006). Almost half of a national sample of adolescents being investigated for maltreatment by child protective services (CPS) identified at least one health risk behavior, such as delinquency, risky sexual behaviors, and suicidality (Leslie et al., 2010).

1.2 Maltreated adolescents and health care

For maltreated adolescents, especially those in foster care, health care access has been problematic. The American Academy of Pediatrics has published guidelines to increase the adequacy of health care for children in foster care (Task Force on Health Care for Children in Foster Care, 2005). Maltreated youth who are not removed from their birth home have similar physical problems and mental health symptoms as children who are in foster care, and thus can have many of the same difficulties with health care access (Mennen, Brensilver, & Trickett, 2010; Schneiderman, Leslie, Arnold-Clark, McDaniel & Xie, 2011). Adolescent health care use and outcomes are also affected by family factors. Residential instability negatively affects adolescent behavioral and emotional outcomes (Leventhal & Brooks-Gunn, 2000). Parental involvement is an important protective factor that reduces adolescent health risk behaviors and improves health outcomes among adolescents (AAP, 2011; DiClemente et al., 2001).

1.3 Socioecological approach to health behavior

The socioecological approach to health behavior integrates multiple levels of influence on the health behaviors of populations, stressing the environmental context of health behavior (community and organizational factors) while incorporating social and psychological influences (intrapersonal and interpersonal factors) (Robinson, 2008; Sallis, Owen & Fisher, 2008). The environmental context affects health behaviors and subsequent health status for families and individuals (Cohen, Scribner & Farley, 2000). The environmental context includes the geographical area in which families live. Shared geography can affect access to health care, physician quality, and even environmental toxins. For example, both social

environmental influences and physical environmental influences affect adolescents' eating patterns (Story, Neumark-Sztainer, & French, 2002). Social influences includes the adolescents' friends and peer networks and physical influences includes accessibility and availability of foods. Both of these influences affect adolescents' health by impacting food choices, perceived norms, and availability of foods.

1.4 Present study

In this study, the geographical and community environment in which adolescents grew up was similar, yet some psychological factors (e.g., maltreatment status) differed. Thus, the purpose of this study was to examine whether maltreatment or the geographical environment was the driving force for self-reported health and health care use after controlling for other individual, family, and home risk factors. We hypothesized that the maltreatment experience would be the primary risk factor and result in health and health care disparities for the maltreated youth versus the comparison youth. The two aims of this cross-sectional analysis were to (a) identify differences in health problems and health care use in maltreated versus comparison adolescents; (b) identify how individual characteristics (age, sex, ethnicity), family and home characteristics (living with a caregiver, changes in residence during the previous year), and maltreatment status affect the adolescents' self-report of health status and health care use.

2. Materials and Methods

2.1 Participants

Data were from the fourth assessment ($M = 7.2$ years after baseline) of an ongoing longitudinal study examining the effects of maltreatment on adolescent development. The sample at Time 1 was 454 adolescents aged 9–12 years (241 boys and 213 girls; 303 maltreated and 151 comparison youth). Of the Time 1 sample, 78% completed the Time 4 assessment ($N = 352$). Participants not surveyed at Time 4 were more likely to be in the maltreatment group ($OR = 2.45, P < .01$) and male ($OR = 1.86, P < .01$). The sample for this analysis at Time 4 included 224 maltreated adolescents (107 boys and 117 girls) and 128 comparison adolescents (72 boys and 56 girls).

2.2 Recruitment

The inclusion criteria at Time 1 were: (a) a new substantiated referral to CPS during the preceding month for any type of maltreatment; (b) 9 to 12 years old; (c) Latino, African American, or Caucasian (non-Latino); and (d) residing in one of 10 zip codes at the time of referral to CPS. The areas in which the youth lived were low-income neighborhoods of an urban California city (Trickett, Mennen, Negriff, & Horn, 2011). CPS, the institutional review board of the affiliated university, and the juvenile court approved the study. CPS referred potential participants and of those contacted, 77% agreed to participate.

The comparison group was recruited using school lists of children aged 9 to 12 years residing in the same 10 zip codes as the maltreated sample. Contact procedures were similar for both comparison and maltreated groups, and 50% of the comparison families agreed to

participate. Comparison families were cross-checked in the CPS database to ensure they had no previous or ongoing experience with child welfare agencies.

2.3 Procedures

Assessments were conducted at a research university. After assent and consent were obtained from the adolescent and caregiver, respectively, the adolescent completed questionnaires and tasks during a 4-hour protocol. Both the child and caregiver were paid for their participation based on the National Institutes of Health standard compensation rate for healthy volunteers.

2.4 Measures

2.4.1 Demographics—Caregivers reported the sex, birth date (to calculate age), and race and ethnicity of their child at Time 1. At Time 4, adolescents reported whether they lived with their caregiver during the previous 30 days and how many residence changes they experienced during the previous year.

2.4.2 Health problems and health care use—Questions regarding symptoms and illnesses were adapted from a health update questionnaire from a previous study of sexually abused girls (Sickel, Noll, Moore, Putnam & Trickett, 2002).

Adolescents were asked about their symptoms (cough, earache, sore throat, headache, stomachache, and other pain) during the previous 30 days using a 5-item scale of *never*, *almost never*, *sometimes*, *almost always*, and *always*. Symptoms were evaluated as the total number of symptoms and the frequency of each symptom. For the former, symptoms were categorized as *no* if the youth did not report experiencing the symptom and *yes* if they reported any instance of the symptom. The possible range for the number of symptoms was 0 to 6. For the frequency measure, the symptoms were divided into two categories based on the type of health problem: colds (average score for ratings of cough, earache, and sore throat) and pain (average score for ratings of headache, stomachache, other pain). Each of the two categories of symptoms had a range of 0–4 (0=never; 1=almost never; 2=sometimes; 3=almost always, and 4=always).

Adolescents were asked if they had any of the following illnesses during the previous year: (a) cold or flu; (b) bladder or urinary tract infection; (c) asthma; (d) sinus trouble; (e) tonsillitis; (f) ear infection; (g) stomachache with vomiting, diarrhea, or fever; (h) bronchitis; (i) skin infection; and (j) pneumonia. The frequency of illnesses during the previous year was reported using a 5-item scale of *none*, *once*, *twice*, *three times*, or *four or more times*. If adolescents reported the frequency of the illness as anything other than none, they were considered to have experienced the illness. The number of illness types was summed to provide an illness count for the previous year. The possible number of illnesses was 0 to 10. The illnesses were classified in 5 categories based on body systems: respiratory (including cold and flu, bronchitis, asthma, and pneumonia); gastrointestinal (stomachache with vomiting, diarrhea, or fever); ear, nose, and throat (including sinus problems, tonsillitis, and ear infection); urinary (bladder or urinary tract infection); and skin infection. For the respiratory and ear, nose, and throat categories, the scores for each illness were averaged to

provide a frequency variable. The frequency for each of the 5 categories of illnesses ranged from 0 to 4 (0=none; 1=once; 2=twice; 3=three times; and 4= four or more times).

Adolescents were asked how many cavities they have had based on a 4-point scale (0 = none, 1 = 1 or 2, 2 = 3 or 4, and 3 = 5 or more).

Adolescents identified whether or not they had a medical checkup or dental exam (excluding orthodontic exams) during the previous year. They were also asked whether they received psychological services from a counselor or mental health professional during the previous year.

2.4.3 Adolescents' perceptions of their own health—Adolescents' ratings of their physical and psychological health were identified on a 5-point scale and divided into *very poor*, *poor*, *or fair* versus *good or excellent*.

2.5 Analysis

Due to correlations between dependent variables, multivariate analysis of variance was used to compare mean level of illnesses during the previous 12 months and symptoms during the previous 30 days between maltreated and comparison adolescents. Analysis of variance was used to examine the mean level of dental cavities between maltreated and comparison groups. Separate models were run for variables with varying time frames (i.e., previous 30 days and previous 12 months). Binary logistic regression was used to examine differences between maltreated and comparison adolescents regarding whether they had visited a doctor, dentist, or psychological counselor during the previous 12 months and their ratings of their own health. Multivariable logistic regression was employed to examine (a) adolescent characteristics (age, sex, race and ethnicity); (b) household characteristics (living with a caregiver during the previous 30 days; number of residences during the previous year); and (c) maltreatment status as predictors of adolescents' perceptions of their health status and health care use. Each group of variables were entered in separate blocks in the order described. Different models were run for each outcome variable of interest (medical checkup, dentist visit, psychological counselor visit, and self-rated physical and psychological health).

3. Results

3.1 Sample Description

Sample descriptives for adolescents can be found in Table 1. The average age was 18.30 years ($SD = 1.41$) for the maltreated group and 18.15 years ($SD = 1.57$) for the comparison group. The gender composition was similar for the maltreated group (boys = 47.8%) and comparison group (56.3%). African Americans comprised the largest racial and ethnic group in the maltreated youth (43.3%), whereas Latinos were the largest group in the comparison youth (42.2%). Most adolescents (80.4% of maltreated and 88.3% of comparison youth) were living with a caregiver. The number of residence changes over the last year was higher for the maltreated ($M = .41$, $SD = 0.93$) versus the comparison ($M = .18$, $SD = 0.46$) samples.

3.2 Differences between Maltreated and Comparison Youth

Comparison adolescents had more symptoms during the previous 30 days ($F[342] = 4.77, P = .03$; comparison: $M = 3.76, SE = 0.16$; maltreated: $M = 3.36, SD = 0.12$; see Table 2).

There were no group differences in the number of illnesses or frequency of illness types during the previous 12 months, or in the frequency of colds or pain during the previous 30 days. Maltreated adolescents were no more likely than comparison youth to have visited a doctor, dentist, psychological counselor during the previous 12 months. There was also no difference between groups in the number of dental cavities and self-rated physical or psychological health.

3.3 Multivariate Results

There was a significant effect of age on having a medical checkup during the previous 12 months (after controlling for sex, ethnicity, living with caregiver, number of residences, and maltreatment status): older adolescents were less likely to have visited a doctor ($OR = 0.83, 95\% CI = 0.70-0.99, P = .045$; see Table 3). Girls were 1.84 times more likely than boys to have visited the dentist during the previous 12 months ($95\% CI = 1.17-2.87, P = .01$).

Several variables predicted having seen a psychological counselor during the previous 12 months; girls were more likely than boys ($OR = 2.11, 95\% CI = 1.20-3.70, P = .01$) and older adolescents were less likely than younger peers ($OR = 0.77, 95\% CI = 0.62-0.97, P = .02$). Girls were more likely to rate their physical health as fair, poor, or very poor ($OR = 2.44, 95\% CI = 1.54-3.85, P = .01$) than boys.

4. Discussion

There was a very small difference in the number of symptoms experienced during the previous 30 days between the maltreated and comparison adolescents and no differences in self-assessed physical and mental health or health care use. The environmental context and geographical location in which these adolescents grew up may be the primary driver in their health behaviors and health problems and not the experience of maltreatment. In the multivariable model, individual demographic factors were related to health care use and self-rated physical health status. Older adolescents were less likely to have received a medical checkup and to have seen a psychological counselor during the previous 12 months. Girls were more likely to have had a dental checkup, seen a psychological counselor, and self-identify their physical health as poor compared to boys.

The findings of this study differed from a previous study of this same population when the adolescents were approximately 12 years old (Time 2 of the longitudinal study,) which utilized caregiver reports of the adolescents' health status and health care use (Schneiderman, Kools, Negriff, Smith, & Trickett, 2015). More caregivers reported that the mental health of maltreated adolescents was poor and more maltreated adolescents received physical checkups than comparison adolescents. Also in the caregiver-reported study, the demographics of the adolescents were not related to health status and health care use. Caregivers might have reported more mental symptoms among maltreated adolescents when they were 12 years old because the child-welfare-reported maltreatment experience was more proximal to the assessment of health data, therefore the stress from the maltreatment

experience may have had more of an effect on their mental health (Burns et al., 2004; Thornberry, Ireland & Smith, 2001). Also, caregiver or parent reports of an adolescent's mental health are not always congruent with how the adolescent views their own mental health (Andrews et al, 1993). In the caregiver-reported study almost 40% of the maltreated sample was living with nonbirth parents, (either relatives or unrelated caregivers, many of whom were foster caregivers), and these caregivers might have used preventive pediatric health care more due to the requirements of the CPS agency (Task Force on Health Care for Children in Foster Care, 2005).

Using adolescent self-report of health status is increasingly accepted, usually remains stable throughout adolescence, and is encouraged by health care professionals to more accurately reflect health problems in adolescents (Varni, Limbers & Burwinkle, 2007; Breidablik, Meland & Lydersen, 2009; Boardman, 2006). In a nationally representative adolescent population, age and gender were related to health status, with girls reporting a lower physical health status than boys, similar to the present study (Vingilis, Wade & Seeley, 2002). The lower self-assessment of physical health status among girls in this study is troublesome because lower rating of health in adolescence can predict increased mortality in adulthood (Burstrom & Fredlund, 2001). In the national study, older adolescents also rated their physical health status higher, (Vingilis, Wade & Seeley, 2002) which we did not find in this study, although older adolescents in our study used less preventive health care and mental health services. It could be that younger adolescents were still using pediatric health services and were accompanied by their caregivers whereas older adolescents were ready to transition to adult health services and were unsure of how to access and use those services (Tuchman, Slap & Britto, 2008).

There was no difference in health care use between maltreated and comparison adolescents. Slightly more of the study sample received a physical exam during the previous year (73.3%) than a national sample (68%). (Yu, Bellamy, Schwalberg & Drum, 2001). Also, of the entire study sample, 61.6% received a dental exam during the previous year, which is slightly lower than in the national study (68%). It should be noted that our sample differed somewhat in age from the national sample (15 to 23 years old vs. 11 to 21 years old, respectively). As expected, girls were more likely to use health services, both mental health services and dental health services than boys (Garland et al., 2005; Yu et al, 2001). Mental health service use was lower than medical or dental care use, with only 20.5 % of the entire sample using mental health services during the last year. In a post hoc analysis, we found that among the maltreated sample, there was a significant correlation ($r = .18, p = .01$) between self-assessed poor mental health and seeing a psychological counselor, but not among the comparison population. The maltreated and comparison adolescents in this study reported similar mental health status, but the maltreated sample may experience more improvement in their mental health because of their greater use of services when their self-assessed mental health is poor. It could also be that the maltreated youth had experience using mental health services during their contact with the child welfare system, and these experiences transferred to their and their family's ability to access mental health services during late adolescence when they identified the need for such services.

4.1 Limitations

There are several limitations to note. First, adolescents' self-report of health problems or health care use could not be confirmed via medical record data. There was no way to distinguish whether some physical health problems were indicative of mental health symptoms. Information regarding income and health insurance status, important determinants of adolescent health status and health care use, was not available (Goodman, 1999; Kataoka, Zhang & Wells, 2002). Data regarding use of acute health services, e.g., the emergency department, and whether the adolescent used pediatric or adult health services were also not available. The comparison population did not have any maltreatment reported to child welfare, but this does not preclude an experience of childhood maltreatment. The study population was urban and primarily minority, which limits generalizability.

4.2 Conclusion

In conclusion, contrary to our hypothesis, for adolescents growing up in an urban, low-income community, a history of child maltreatment was related a lower likelihood of reported symptoms during the previous 30 days and no differences in other health problems, health care use, and self-reported health status compared to adolescents without maltreatment reports to CPS. The gender and age of adolescents were related to differences in health care use and self-reported physical health status. This study found that older adolescents were less likely to use mental health services and preventive medical care, and thus may need anticipatory guidance transitioning to adult health care services (Reiss, Gibson & Walker, 2005). More research is needed to explore how the environmental context affects health in maltreated adolescents. Specifically, exploring how the availability and quality of health services in different neighborhoods may have influenced both the adolescents' health status and health care use would be helpful in explaining the lack of influence of maltreatment in this sample.

Acknowledgements

This research was supported by funding from the National Institutes of Health (R01 HD39129 and R01 DA02456902, PI: P. Trickett; K01HD069457, PI: S. Negriff). The authors would also like to acknowledge Eric Lindberg for editorial assistance.

Abbreviations

CPS child protective services

REFERENCES

- American Academy of Pediatrics, American Academy of Family Physicians, American College of Physicians, Transitions Clinical Report Authoring Group. Supporting the health care transition from adolescence to adulthood in the medical home. *Pediatrics*. 2011; 128(1):182–200. 2011. [PubMed: 21708806]
- Andrews VC, Garrison CZ, Jackson KL, Addy CL, McKeown RE. Mother-adolescent agreement on the symptoms and diagnoses of adolescent depression and conduct disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1993; 32(4):731–738. [PubMed: 8340292]
- Boardman JD. Self-rated health among U.S. adolescents. *Journal of Adolescent Health*. 2006; 38(4): 401–408. [PubMed: 16549301]

- Breidablik HJ, Meland E, Lydersen S. Self-rated health during adolescence: stability and predictors of change (Young-HUNT study, Norway). *European Journal of Public Health*. 2009; 19(1):73–78. doi: <http://dx.doi.org/10.1093/eurpub/ckn111>. [PubMed: 19022851]
- Burström B, Fredlund P. Self rated health: is it as good a predictor of subsequent mortality among adults in lower as well as in higher social classes? *Journal of Epidemiology and Community Health*. 2001; 55(11):836–840. [PubMed: 11604441]
- Burns BJ, Phillips SD, Wagner HR, Barth RP, Kolko DJ, Campbell Y, et al. Mental health need and access to mental health services by youths involved with child welfare: a national survey. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2004; 43(8):960–970. doi: <http://dx.doi.org/10.1097/01.chi.0000127590.95585.65>.
- Christian CW, Schwarz DF. Child maltreatment and the transition to adult-based medical and mental health care. *Pediatrics*. 2011; 127(1):139–145. [PubMed: 21149424]
- Cohen DA, Scribner RA, Farley TA. A structural model of health behavior: a pragmatic approach to explain and influence health behaviors at the population level. *Preventive Medicine*. 2000; 30(2): 146–154. [PubMed: 10656842]
- DiClemente RJ, Wingood GM, Crosby R, Sionean C, Cobb BK, Harrington K, et al. Parental monitoring: association with adolescents' risk behaviors. *Pediatrics*. 2001; 107(6):1363–1368. [PubMed: 11389258]
- Garland AF, Lau AS, Yeh M, McCabe KM, Hough RL, Landsverk JA. Racial and ethnic differences in utilization of mental health services among high-risk youths. *American Journal of Psychiatry*. 2005; 162(7):1336–1343. [PubMed: 15994717]
- Goodman E. The role of socioeconomic status gradients in explaining differences in US adolescents' health. *American Journal of Public Health*. 1999; 89(10):1522–1528. [PubMed: 10511834]
- Hussey JM, Chang JJ, Kotch JB. Child maltreatment in the United States: prevalence, risk factors, and adolescent health consequences. *Pediatrics*. 2006; 118(3):933–942. [PubMed: 16950983]
- Kataoka SH, Zhang L, Wells KB. Unmet need for mental health care among U.S. children: variation by ethnicity and insurance status. *American Journal of Psychiatry*. 2002; 159(9):1548–1555. [PubMed: 12202276]
- Leslie LK, James S, Monn A, Kauten MC, Zhang J, Aarons G. Health-risk behaviors in young adolescents in the child welfare system. *Journal of Adolescent Health*. 2010; 47(1):26–34. [PubMed: 20547289]
- Leventhal T, Brooks-Gunn J. The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*. 2000; 126(2):309–337. [PubMed: 10748645]
- Mennen FE, Brensilver M, Trickett PK. Do maltreated children who remain at home function better than those who are placed? *Children and Youth Service Review*. 2010; 32(12):1675–1682.
- Reiss G, Gibson RW, Walker LR. Health care transition: youth, family, and provider perspectives. *Pediatrics*. 2005; 115(1):112–120. [PubMed: 15629990]
- Ringeisen H, Casanueva C, Urato M, Cross T. Special health care needs among children in the child welfare system. *Pediatrics*. 2008; 122(1):e232–e241. [PubMed: 18595968]
- Robinson T. Applying the socio-ecological model to improving fruit and vegetable intake among low-income African Americans. *Journal of Community Health*. 2008; 33(6):395–406. [PubMed: 18594953]
- Sallis, JF.; Owen, N.; Fisher, EB. Ecological models of health behavior. In: Glanz, K.; Rimer, BK.; Viswanath, KV., editors. *Health Behavior and Health Education: Theory, Research, and Practice*. San Francisco, CA: Jossey-Bass; 2008. p. 465–486.
- Schneiderman JU, Kools S, Negriff S, Smith S, Trickett PK. Differences in caregiver-reported health problems and health care use in maltreated adolescents and a comparison group from the same urban environment. *Research in Nursing & Health*. 2015; 38(1):60–70. [PubMed: 25557881]
- Schneiderman JU, Leslie LK, Arnold-Clark JS, McDaniel D, Xie B. Pediatric health assessments of young children in child welfare by placement type. *Child Abuse and Neglect*. 2011; 35(1):29–39. [PubMed: 21316106]

- Sickel AE, Noll JG, Moore PJ, Putnam FW, Trickett PK. The long-term physical health and healthcare utilization of women who were sexually abused as children. *Journal of Health Psychology*. 2002; 7(5):583–597. [PubMed: 22113143]
- Steele JS, Buchi KF. Medical and mental health of children entering the Utah foster care system. *Pediatrics*. 2008; 122(3):e703–e709. [PubMed: 18762506]
- Story M, Neumark-Sztainer D, French S. Individual and environmental influences on adolescent eating behaviors. *Journal of the American Dietetic Association*. 2002; 102(3):S40–S51. [PubMed: 11902388]
- Task Force on Health Care for Children in Foster Care. *Fostering health: health care for children and adolescents in foster care*. Delmar, NY: American Academy of Pediatrics; 2005.
- Thornberry TP, Ireland TO, Smith CA. The importance of timing: the varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Developmental Psychopathology*. 2001; 13(4):957–979.
- Trickett, PK.; Mennen, FE.; Negriff, S.; Horn, JL. *The USC Young Adolescent Project: Sampling strategy, sample description and comparisons of neighborhood characteristics for maltreated versus comparison participants (Technical Report)*. Los Angeles, CA: University of Southern California, School of Social Work; 2011.
- Tuchman LK, Slap GB, Britto MT. Transition to adult care: experiences and expectations of adolescents with a chronic illness. *Child: Care, Health and Development*. 2008; 34(5):557–563.
- Varni JW, Limbers CA, Burwinkle TM. How young can children reliably and validly self-report their health-related quality of life?: an analysis of 8,591 children across age subgroups with the PedsQL™ 4.0 Generic Core Scales. *Health and Quality Life Outcomes*. 2007; 5:1.
- Vingilis ER, Wade TJ, Seeley JS. Predictors of adolescent self-rated health: analysis of the National Population Health Survey. *Canadian Journal of Public Health*. 2002; 93(3):193–197. [PubMed: 12050986]
- Yu SM, Bellamy HA, Schwalberg RH, Drum MA. Factors associated with use of preventive dental and health services among U.S. adolescents. *Journal of Adolescent Health*. 2001; 29(6):395–405. [PubMed: 11728889]

Highlights

1. Maltreated adolescents did not report health and health care disparities
2. Older adolescents may need anticipatory guidance for accessing health services.
3. The physical environment may affect adolescents' health problems and health care use more than the maltreatment experience.

Table 1

Descriptive Statistics of the Sample

	Maltreated	Comparison
<i>n</i>	224	128
Child age, <i>M</i> (<i>SD</i>)	18.30 (1.41)	18.15 (1.57)
Child sex, %		
Male	47.8	56.3
Female	52.2	43.8
Child ethnicity, %		
African American	43.3	35.2
Latino	33.9	42.2
Non-Latino White	9.4	10.2
Mixed or biracial	13.4	12.5
Residence Changes, <i>M</i> (<i>SD</i>)	.41 (.93)*	.18 (.46)*
Living with a caregiver, %	80.4	88.3

* $p < .05$;

SD = standard deviation.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2
Differences between Maltreated and Comparison Adolescents Regarding Health Care Status and Use

	Total	Maltreated <i>M (SD) or %</i>	Comparison
Number of symptoms during previous 30 days	3.50 (1.77)	3.35 (1.83)	3.75 (1.62) ^a
Frequency of symptoms during previous 30 days			
Colds	.84 (.69)	.82 (.73)	.88 (.61)
Pain	1.29 (.83)	1.25 (.85)	1.35 (.80)
Number of illnesses in previous 12 months	2.22 (1.59)	2.27 (1.42)	2.18 (1.68)
Frequency of illnesses during previous 12 months			
Respiratory	.43 (.45)	.43 (.45)	.46 (.46)
Gastrointestinal	1.05 (.125)	1.00 (1.22)	1.14 (1.29)
Ear, nose, and throat	.38 (.55)	.38 (.57)	.39 (.53)
Urinary	.11 (.41)	.12 (.46)	.09 (.31)
Skin infection	.18 (.67)	.16 (.65)	.21 (.69)
Number of dental cavities	1.62 (1.03)	1.56 (1.06)	1.71 (.98)
Doctor visit during previous 12 months	73.3	69.5	75.4
Dentist visit during previous 12 months	61.6	61.1	62.5
Mental health professional visit during previous 12 months	20.5	23.2	15.6
Self-report of poor physical health	37.2	40.6	31.2
Self-report of poor psychological health	29.5	31.3	26.6

Mean differences computed using multivariate or one-way analysis of variance; proportional differences computed using chi-square. Frequency of colds includes cough, earache, and sore throat; frequency of pain includes headache, stomachache, and other pain; respiratory illnesses includes cold and flu, bronchitis, asthma, and pneumonia; gastrointestinal includes stomachache with vomiting, diarrhea, or fever; ear, nose, and throat includes sinus problems, tonsillitis, and ear infection; urinary includes bladder or urinary tract infection. Range for the number of symptoms was 0 to 6. Range for the number of illnesses was 0 to 10. Frequency of symptoms ranged from 0 = *never*, 1 = *almost never*, 2 = *sometimes*, 3 = *almost always*, and 4 = *always*. Frequency of illnesses ranged from 0 = *none*, 1 = *once*, 2 = *twice*, 3 = *three times*, and 4 = *four or more times*. Dental cavities ranged from 0 = *none*, 1 = *1 or 2*, 2 = *3 or 4*, and 3 = *5 or more*.

^a $p = .03$ between maltreated and comparison youth.

Table 3

Results of Multivariate Logistic Regression

	Medical Checkup	Dentist Visit	Mental Health Professional Visit	Self- Reported Poor Physical Health	Self- Reported Poor Psychologi- cal Health
Age	0.83 (0.70–0.99)*	0.89 (0.75–1.05)	0.77 (0.62–0.96)*	1.08 (0.91–1.28)	1.01 (0.84–1.20)
Sex (ref: male)	1.34 (0.82–2.18)	1.84 (1.17–2.87)**	2.11 (1.20–3.70)**	2.44 (1.54–3.85)**	1.52 (0.95–2.45)
White (ref) vs. minority	0.98 (0.43–2.23)	0.62 (0.28–1.37)	1.21 (0.44–3.33)	1.51 (0.66–3.44)	1.52 (0.63–3.66)
Living with caregiver (ref: yes)	0.90 (0.46–1.77)	1.00 (0.53–1.89)	1.92 (0.91–4.07)	1.17 (0.61–2.24)	1.35 (0.70–2.61)
Number of residences during previous year	0.94 (0.70–1.28)	1.01 (0.76–1.35)	1.03 (0.75–1.42)	1.07 (0.81–1.42)	1.18 (0.89–1.56)
Maltreatment vs. comparison (ref)	1.38 (0.84–2.28)	0.91 (0.58–1.45)	1.46 (0.81–2.63)	1.35 (0.84–2.19)	1.14 (0.69–1.87)

Ref = reference category.

* $P < .05$.** $P < .01$.