Alcohol Use Assessment in Young Adult Cancer Survivors

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Purpose/Objectives: To determine whether oncology practitioners assess for alcohol consumption rates and usage patterns among young adult cancer survivors, and to determine drinking patterns and frequency of alcoholic beverage consumption among young adult cancer survivors.

Design: Retrospective chart review.

Setting: Two outpatient cancer clinics.

Sample: 77 young adult survivors of childhood cancer aged 18–30 years.

Methods: Charts were selected from June to December 2009 and data were extracted using a structured questionnaire.

Main Research Variables: Oncology practitioner assessment of alcohol use and alcohol consumption of young adult cancer survivors.

Findings: Alcohol screening was conducted for 48 participants. No significant differences were noted in most variables between those not screened for alcohol use and those screened for alcohol use. Of the 48 screened for alcohol use, 30 reported "no use." For the 18 who reported alcohol use, the terms used to describe the frequency varied and were vague.

Conclusions: The key finding of the study was that screening and documentation of alcohol consumption was poorly and inconsistently performed in the authors' sample of young adult cancer survivors.

Implications for Nursing: Similar to healthy young adults aged 18–30 years, young adult cancer survivors are at a developmental age where it is likely they will engage in unhealthy drinking; therefore, they should be screened for alcohol use and binge drinking. Practitioners can incorporate simple, short questions into health assessment visits that allow them to screen for unhealthy alcohol use.

Key Words: alcohol consumption; young adult cancer survivors; screening

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The fastest growing population of cancer survivors in the United States is adolescents and young adults (Howlader et al., 2013). In 2010, 67,500 adolescents and young adults (aged 15–39 years) were diagnosed with cancer (National Cancer Institute [NCI], 2013). The five-year survival rate for this age group is greater than 80% (NCI, 2013). Adolescent and young adult patients with cancer are challenged with many issues specific to their age group. Teenage cancer survivors have been described as the "lost tribe," and a need has been cited for an organized continuum of both medical and social treatment strategies (Stevens, 2006).

One major challenge confronting young adults is alcohol use and abuse. In the United States and worldwide, young adults aged 18–30 years have the highest prevalence of alcoholic beverage consumption (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013). In 2012, the rate of current alcohol use (at least one drink in the past 30 days) was 49% among people aged 18–20 and 69% among those aged 21–25 (SAMHSA, 2013). Adolescent and young adult drinking behaviors are different from adults; young adults primarily engage in binge or heavy episodic drinking. Binge drinking is highest among those 18–25 years of age, with the peak at 21 years (SAMHSA, 2013). Considering these statistics, oncology practitioners involved in the long-term follow-up of childhood cancer survivors must be knowledgeable about alcohol consumption levels and patterns of use among young adults and recognize the importance for alcohol use screening in this population.

The aims of this investigation were to determine if oncology practitioners screen for alcohol consumption and usage patterns (i.e., binge drinking) among young adult cancer survivors (aged 18–30 years) and, secondly, to determine drinking patterns and frequency of alcoholic beverage consumption among young adult survivors. Compared to the general population, young adult cancer survivors have an increased risk for developing other cancers, chronic conditions, and premature mortality; unhealthy drinking patterns may place young adults at additional risk for poor health outcomes (Klosky et al., 2012; Larcombe, Mott, & Hunt, 2002).

Literature Review

Alcohol Use Patterns Among Young Adults

The most common drinking pattern among the 18–30 group is binge drinking (SAMHSA, 2013). Binge drinking is defined as the consumption of five or more drinks in a row for men and four or more for women (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2005). Rates of past month binge alcohol use in 2012 were 31% among people aged 18–20 and peaked at 45% among those aged 21–25. Heavy alcohol use, defined as five or more drinks in the same occasion on each of five or more days in the past 30 days, was reported by 13% of people aged 18–25 (SAMHSA, 2013).

Among the 18–25 age group, those most likely to binge drink are male (46% versus 33% for females). Among racial groups, rates of past month binge drinking in young adults are 8.5% for American Indian and Alaska Native, 7.6% for Caucasian, 5.1% for Hispanic/Latino, 4.5% for Black or African American, and 1.7% for Asian and Pacific Islander. Another high-risk group is college students. Four of five college students drink alcohol, and one in five students report three or more binge drinking episodes in the prior two weeks (Gunzerath, Faden, Zakhari, & Warren, 2004). In addition, a Centers for Disease Control and Prevention ([CDC], 2012) report indicated that those defined as binge drinkers reported an average number of eight rather than five drinks per binge drinking episode. Evidence also exists that more extreme forms of drinking are escalating (i.e., 21 drinks on a 21st birthday) (Rutledge, Park, & Sher, 2008) and that, on university campuses, binge drinking episodes occur on a more frequent basis and often are repeated every weekend (Beets et al., 2009). Finally, the results of the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions indicated that the prevalence of 12-month Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV alcohol use disorders are unacceptably high among young adults. Among those aged 18–29 years, 12-month prevalence of DSM-IV alcohol use disorder (alcohol abuse and alcohol dependence) was 16% (Hasin, Stinson, Ogburn, & Grant, 2007). That 12-month prevalence rate was greater than all other age groups (Hasin et al., 2007).

Alcohol Consumption in Young Adult Cancer Survivors

Several reports indicate that alcohol consumption and binge drinking occur in survivors of childhood cancer. Overall, few studies have specifically examined alcohol use and binge drinking; often, alcohol use has been examined in the context of other risky behaviors. Rebholz et al. (2012) compared the frequency of alcohol consumption and binge drinking between young adult Swiss cancer survivors (aged 20–39.9 years) (n = 1,049) and age-matched young adults from the general population (n = 5,027). Young adult cancer survivors reported consuming alcohol more frequently (22% versus 12% for the control group; odds ratio [OR] = 1.7, 95% confidence interval [CI] [1.3, 2.1]) and engaging in more binge drinking (18% versus 9% for the control group; OR = 2.9, 95% CI [2.3, 3.8]). Frequent alcohol use was defined as at least 1–3 drinks several times per week, and binge drinking was defined as consuming more than eight drinks on a single occasion (Rebholz et al., 2012). Carswell et al. (2008) compared binge drinking between young adult Canadian cancer survivors (aged 16–37 years) (n = 1,263) and an age- and gender-match general population control group (n = 1,422). Survivors reported less binge drinking compared to controls (25% versus 31%, respectively; adjusted odds ratio [$OR_{adjusted}$] = 0.66, 95% CI [0.55, 0.78]). Binge drinking was defined as consuming more than five alcoholic drinks on the days a person consumed alcohol (Carswell et al., 2008). In Lown et al. (2008), risky drinking was defined as exceeding three drinks per day or more than seven drinks per week for women and more than four drinks per day or more than 14 drinks per week for men. Heavy drinking was defined as five or more drinks per day for women and more than six drinks per day for men. Using data from the Childhood Cancer Survivor Study, Lown et al. (2008) found that cancer survivors (aged 18–48 years) were less likely to be both risky (16% versus 18% in the control group; $OR_{adjusted}$ = 0.9, 95% CI [0.8, 1]) and heavy drinkers (8% versus 10% in the control group; $OR_{adjusted}$ = 0.8, 95% CI [0.7, 0.9]). Among cancer survivors and control participants, risk factors for heavy drinking included being male and younger (aged 18–21 years).

In survivors of childhood cancer, others have examined alcohol consumption in the context of other risky behaviors. Using survey data from the Childhood Cancer Survivor Study, Klosky et al. (2012) compared alcohol beverage type (beer versus hard liquor) and binge drinking between adolescent and young adult (aged 14–20 years) cancer survivors and age-matched siblings. Survivors reported less current wine/beer and hard liquor consumption and binge drinking. In that study, binge drinking was not defined. Similarly, Larcombe et al. (2002) found that young adult cancer survivors (aged 18–30 years) in the United Kingdom reported less binge drinking (37%) compared to controls (42%) and siblings (43%). Binge drinking was defined as six or more units (10 ml) of alcohol on any day in the past month. Larcombe et al. (2002) also found that cancer survivors reported more light drinking (as many as eight units per week) compared to controls and survivors. The data highlight the excessive and abusive drinking of individuals in this age group and the importance for screening for any level of alcohol use among young adult cancer survivors.

Methods

Data were collected through a retrospective chart review conducted at two large midwestern urban outpatient cancer centers, the University of Illinois at Chicago and the University of Chicago. The authors used a convenient and quota sampling method (Gearing, Mian, Barber, & Ickowicz, 2006). Charts were selected from June to December of 2009, and it was predetermined that an equal number of charts would be reviewed at each site. Inclusion criteria were diagnosis of cancer, active or past cancer treatment (e.g., chemotherapy, radiation), and aged 18–30 years. All participants reviewed were considered cancer survivors (i.e., individual from the time of diagnosis, through the balance of his or her life) (NCI, 2012). Within the outpatient notes, the history and physical forms for the clinical visit from June to December 2009 were reviewed to determine alcohol use. This study was approved by the universities' institutional review boards.

Two chart abstractors (one at each site) used a structured questionnaire to collect information on variables such as age, gender, presence of comorbid conditions (i.e., cardiovascular disease), type of cancer, and initial cancer diagnosis date, as well as other variables related to cancer diagnosis, such as type of treatment received. Charts were reviewed to determine if alcohol use was assessed, along with alcohol use frequency and pattern, as well as type of alcoholic beverage. If alcohol consumption was assessed, the exact wording was extrapolated from the chart and recorded on the demographic data form.

The Mann-Whitney U test was used for non-parametric comparisons (e.g., proportions, percentages) and analysis of variance (ANOVA) was used for continuous variables. All analyses were conducted using SigmaStat®, version 12.

Results

The mean age of the participants was 24.79 years (SD = 3.7 years). At the time of chart review, the average time of survival was 2.5 years. Table 1 shows gender, race, marital status, and cancer type of the sample. Among the participants, only 4% reported comorbidities such as asthma and gastroesophageal reflux disease.

Alcohol screening was conducted for 48 participants. No significant differences were noted in marital status and race between those not screened for alcohol use and those screened for alcohol use ($p = 0.439$) (see Figure 1). However, participants who were not screened for alcohol were younger ($\bar{X} = 23$ years, SD = 4) than those who were screened ($\bar{X} = 25$ years, SD = 4) ($p = 0.019$). Of the 48 screened for alcohol use, 30 reported no use, 18 reported current consumption, and 1 reported "does not abuse alcohol." The "no alcohol use" survivors were younger ($\bar{X} = 24$ years, SD = 4) than those who reported alcohol use ($\bar{X} = 27$ years, SD = 2). For those who reported alcohol use, the terms used to describe the frequency varied (see Table 2). Quantification of alcohol consumption was documented in only one participant and recorded as the number of alcoholic drinks per week.

Table 1. Sample Characteristics (N = 77)

Characteristic	n
Gender	
Male	41
Female	36
Race	
White	33
African American	16
Hispanic/Latino	13
Asian/Pacific Islander	7
Other	8
Marital status	
Single	58
Married	13
Divorced	1
Unknown	5
Cancer type	
Hematologic malignancies	48
Solid tumors	23
Brain malignancies	3
Melanomas	3

Discussion

Young adult survivors of cancer face unique health challenges and require long-term follow-up as recommended by numerous professional organizations such as the American Cancer Society and the Children's Oncology Group (Kushi et al., 2012). Strong emphasis has been placed on monitoring for late effects of cancer treatment as well as lifestyle behaviors, such as alcohol consumption. The key finding of this study was that screening and documentation of alcohol consumption was poorly performed in the authors' sample of young adult oncology survivors. When screening for alcohol use was included, different terms or adjectives were used (i.e., social, occasional, and rarely), rather than more specific questions that focus on frequency, quantity, and binge drinking pattern. For example, more specific questions recommended as initial screening questions related to frequency, quantity, and binge drinking for use in clinical settings include: "How many days per week do you drink alcohol?" "On a typical day when you drink alcohol, how many standard drinks do you have?" and "How many times per month do you drink more than 3–4 drinks on a single occasion?" (Fleming & Graham, 2001).

Knowledge Translation

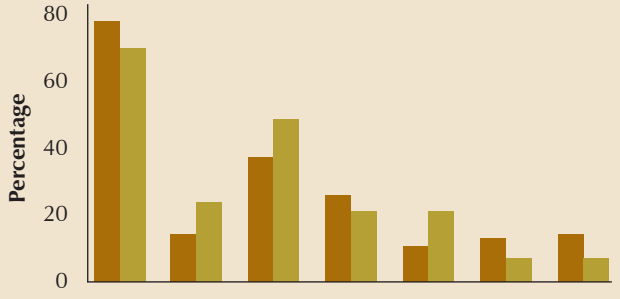
Because young adult cancer survivors are at the developmental age where they will likely engage in unhealthy drinking, this population should be screened for alcohol use by healthcare providers.

When screening for alcohol use, practitioners should use terms or adjectives that focus on frequency, quantity, and binge drinking pattern.

All young adults should be informed about the medical and social consequences related to binge drinking, which include adverse cardiovascular and structural and functional brain effects, unintentional injuries, and alcohol poisoning.

In the current study, age was the only significantly different variable between survivors screened for alcohol use and those not screened. Those screened were older than those not screened. The mean age for both groups was older than 21 years, which is the legal drinking age in most states. As noted earlier, rates of current alcohol use (at least one drink in the past 30 days) and binge drinking are highest in those aged 18–20 years. In young adult cancer survivors, however, Rebholz et al. (2012) found that peak frequency of binge drinking in male survivors occurred between 24–26 years of age, which is slightly above the national average for healthy young adults. Because the mean age of the young adult survivors in the current study was 25 years, participants in this study could be expected to be at increased risk for binge drinking. In the current study, and in all of the charts reviewed, no references or documentation related to binge drinking were found.

Although the authors were unable to determine prevalence of alcoholic beverage consumption because the information was missing from many charts among survivors screened for alcohol use, 30 participants reported no use. The authors also did not include a healthy control or age-matched group selected from the general population.



AA—African American; A/PI—Asian/Pacific Islander; His/Lat—Hispanic/Latino; Other—other race or ethnicity

Figure 1. Comparison of Participant Variables

Findings from most studies reviewed suggest that cancer survivors are less likely to engage in risky drinking patterns than age-matched control groups (Carswell et al., 2008; Larcombe et al., 2002; Lown et al., 2008). However, these young adults are at a developmental age where it is likely they will engage in unhealthy drinking; therefore, they should be screened for alcohol use and binge drinking. Collectively, the data indicate the critical need to screen for alcohol consumption among young adult cancer survivors.

Limitations

The current study had several limitations, which included a retrospective chart review design and small sample size. Importantly, the lack of consistent or standardized alcohol use screening questions limited the authors' ability to determine prevalence. Participants ranged from 18–30 years of age. A more narrow age range may facilitate a better understanding of drinking patterns and alcohol use because existing data support that attending college and other life stages and transitions may affect overall drinking volume and patterns (Grucza, Norberg, & Bierut, 2009; Staff, Greene, Maggs, & Schoon, 2013). The authors did not determine if participants were undergoing current chemotherapy or radiation, which may be associated with nausea and vomiting that may affect the likelihood of drinking alcohol. Also, the authors did not note whether participants were attending college or engaged in full-time employment; these factors also may influence the likelihood of consuming alcohol (Grucza et al., 2009; Staff et al., 2013). Finally, even with a standardized alcohol assessment tool, teenagers and young adults may not disclose information about drinking.

Implications for Nursing

Although multiple health-related risks are of specific concern among young adult cancer survivors, this population generally remains unscreened for alcohol consumption and abuse (Lown et al., 2008). No specific guidelines exist for screening in this population. As noted, three simple screening questions can be incorporated into a clinic visit: "How many days per week do you drink alcohol?" "On a typical day when you drink alcohol, how many standard drinks do you have?" and "How many times per month do you drink more than 3–4 drinks on a single occasion?" (Fleming & Graham, 2001). Another effective screening tool for assessment of at-risk drinking is the NIAAA (2005) single-item

Table 2. Descriptors of Alcohol Consumption Among Those Who Reported Alcohol Use (N = 18)

Descriptor	n
Assessed for alcohol consumption	48
Report current alcohol consumption	18
Descriptor for frequency of current alcohol consumption	
• Social	5
• Occasional	5
• Rare	2
• Not abuse	1
• Moderate	1
• Current and past use	1
• Denied significant use	1
Consumes alcohol (documentation of alcohol use frequency was illegible or incomplete)	2
Use quantified per week	1

Note. More than one descriptor could be used per chart.

screening test. Practitioners ask the question, "On any single occasion during the past three months, have you had more than XX drinks containing alcohol." Male patients should be asked if they consume five drinks or more and females should be asked if they consume four drinks or more. If young adults are consuming levels that seem potentially consistent with substance use disorders, they can be further assessed with other alcohol screening tools, such as the Alcohol Use Disorders Identification Test (AUDIT) or AUDIT-C (the first three AUDIT questions) (Reinert & Allen, 2007). AUDIT is a 10-item questionnaire that identifies individuals with alcohol problems experienced within the past year (NIAAA, 2003). Both versions of AUDIT have been validated in young adult populations (Demartini & Carey, 2012).

Using these questions and tools, practitioners can develop standardized screening protocols that would facilitate determining the patient's daily and weekly consumption patterns and alcohol-related at-risk status. Screening allows the opportunity for practitioners to develop individualized preventive strategies and, importantly, educate the young adult about adverse risks associated with excessive alcohol use. All young adults should be informed about the medical and social consequences related to binge drinking, which include adverse cardiovascular and structural and functional brain effects, unintentional injuries, and alcohol poisoning (Goslawski et al., 2013; Hermens et al., 2013; Hingson, Zha, & Weitzman, 2009). Excessive alcohol use also is associated with risky or unsafe sexual activity, physical assaults, criminal violations, and increased absenteeism from school or work. In addition, among college students (aged 18–25 years), 600,000 sustain alcohol-related injuries each year and 1,825 die those injuries (CDC, 2012).

Conclusion

Screening and documentation of alcohol consumption was poorly performed in the sample of young adult oncology survivors. Among those screened for alcohol, only a small percentage reported alcohol use. However, because young adults aged 18–30 years are likely to engage in unhealthy drinking, they should be screened for alcohol use. Practitioners can incorporate simple, short questions into health assessment visits that allow them to screen for unhealthy alcohol use. The American Cancer Society guidelines on nutrition and physical activity for cancer prevention recommend that people who drink alcohol limit their intake to no more than two drinks per day for men and one drink per day for women (Kushi et al., 2012). Educating all healthcare professionals about the importance of alcohol screening and incorporating standardized screening protocols into the electronic medical record would facilitate the routine screening of and education about alcohol use.

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References

Beets, M.W., Flay, B.R., Vuchinich, S., Li, K.K., Acock, A., Snyder, F.J., & the Tobacco Etiology Research Network. (2009). Longitudinal patterns of binge drinking among first year college students with a history of tobacco use. *Drug and Alcohol Dependence, 103*(1–2), 1–8. doi:10.1016/j.drugalcdep.2008.12.017

Carswell, K., Chen, Y., Nair, R.C., Shaw, A.K., Speechley, K.N., Barrera, M., & Maunsell, E. (2008). Smoking and binge drinking among Canadian survivors of childhood and adolescent cancers: A comparative, population-based study. *Pediatric Blood and Cancer, 51*, 280–287. doi:10.1002/pbc.21568

Centers for Disease Control and Prevention. (2012). Vital signs: Binge drinking prevalence, frequency, and intensity among adults—United States, 2010. *MMWR Morbidity and Mortality Weekly Report, 61*, 14–19.

Demartini, K.S., & Carey, K.B. (2012). Optimizing the use of the audit for alcohol screening in college students. *Psychological Assessment, 24*, 954–963. doi:10.1037/a0028519

Fleming, M.F., & Graham, A.W. (2001). Screening and brief interventions for alcohol use disorders in managed care settings. *Recent Developments in Alcoholism, 15*, 393–416.

Gearing, R.E., Mian, I.A., Barber, J., & Ickowicz, A. (2006). A methodology for conducting retrospective chart review research in child and adolescent psychiatry. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 15*, 126–134.

Goslawski, M., Piano, M.R., Bian, J.T., Church, E.C., Szczurek, M., & Phillips, S.A. (2013). Binge drinking impairs vascular function in young adults. *Journal of the American College of Cardiology, 62,* 201–207. doi:10.1016/j.jacc.2013.03.049

Grucza, R.A., Norberg, K.E., & Bierut, L.J. (2009). Binge drinking among youths and young adults in the United States: 1979–2006. *Journal of the American Academy of Child and Adolescence Psychiatry, 48,* 692–702.

Gunzerath, L., Faden, V., Zakhari, S., & Warren, K. (2004). National Institute on Alcohol Abuse and Alcoholism report on moderate drinking. *Alcoholism, Clinical and Experimental Research, 28,* 829–847.

Hasin, D.S., Stinson, F.S., Ogburn, E., & Grant, B.F. (2007). Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Archives of General Psychiatry, 64,* 830–842. doi:10.1001/archpsyc.64.7.830

Hermens, D.F., Lagopoulos, J., Tobias-Webb, J., De Regt, T., Dore, G., Juckes, L., . . . Hickie, I.B. (2013). Pathways to alcohol-induced brain impairment in young people: A review. *Cortex, 49,* 3–17. doi:10.1016/j.cortex.2012.05.021

Hingson, R.W., Zha, W., & Weitzman, E.R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24, 1998–2005. *Journal of Studies on Alcohol and Drugs Supplement, 16,* 12–20.

Howlader, N., Noone, A.M., Krapcho, M., Garshell, J., Neyman, N., Altekruse, S.F., . . . Cronin, K.A. (2013). *SEER cancer statistics review, 1975–2010, based on November 2012 SEER data submission posted to the SEER web site April 2013*. Bethesda, MD: National Cancer Institute.

Klosky, J.L., Howell, C.R., Li, Z., Foster, R.H., Mertens, A.C., Robison, L.L., & Ness, K.K. (2012). Risky health behavior among adolescents in the childhood cancer survivor study cohort. *Journal of Pediatric Psychology, 37,* 634–646. doi:10.1093/jpepsy/jss046

Kushi, L.H., Doyle, C., McCullough, M., Rock, C.L., Demark-Wahnefried, W., Bandera, E.V., . . . American Cancer Society 2010 Nutrition and Physical Activity Guidelines Advisory Committee. (2012). American Cancer Society guidelines on nutrition and physical activity for cancer prevention: Reducing the risk of cancer with healthy food choices and physical activity. *CA: A Cancer Journal for Clinicians, 62,* 30–67. doi:10.3322/caac.20140

Larcombe, I., Mott, M., & Hunt, L. (2002). Lifestyle behaviours of young adult survivors of childhood cancer. *British Journal of Cancer, 87,* 1204–1209. doi:10.1038/sj.bjc.6600632

Lown, E.A., Goldsby, R., Mertens, A.C., Greenfield, T., Bond, J., Whitton, J., . . . Zeltzer, L.K. (2008). Alcohol consumption patterns and risk factors among childhood cancer survivors compared to siblings and general population peers. *Addiction, 103,* 1139–1148.

National Cancer Institute. (2012). *About cancer survivorship research: Survivorship definitions*. Retrieved from http://cancercontrol.cancer.gov/ocs/definitions.html

National Cancer Institute. (2013). *A snapshot of adolescent and young adult cancers*. Retrieved from http://www.cancer.gov/researchandfunding/snapshots/adolescent-young-adult

National Institute on Alcohol Abuse and Alcoholism. (2003). *Assessing alcohol problems: A guide for clinicians and researchers* (2nd ed.). Washington, DC: U.S. Department of Health and Human Services Public Health Service.

National Institute on Alcohol Abuse and Alcoholism. (2005). *Module 1: Epidemiology of alcohol abuse problems in the United States*. Rockville, MD: Author.

Rebholz, C.E., Kuehni, C.E., Strippoli, M.P., Rueegg, C.S., Michel, G., Hengartner, H., . . . Swiss Pediatric Oncology Group (SPOG). (2012). Alcohol consumption and binge drinking in young adult childhood cancer survivors. *Pediatric Blood and Cancer, 58,* 256–264. doi:10.1002/pbc.23289

Reinert, D.F., & Allen, J.P. (2007). The Alcohol Use Disorders Identification Test: An update of research findings. *Alcoholism, Clinical and Experimental Research, 31,* 185–199.

Rutledge, P.C., Park, A., & Sher, K.J. (2008). 21st birthday drinking: Extremely extreme. *Journal of Consulting and Clinical Psychology, 76,* 511–516. doi:10.1037/0022-006X.76.3.511

Staff, J., Greene, K.M., Maggs, J.L., & Schoon I. (2013). Family transitions and changes in drinking from adolescence through mid-life. *Addiction, 109,* 227–236.

Stevens, M.C. (2006). The 'lost tribe' and the need for a promised land: The challenge of cancer in teenagers and young adults. *European Journal of Cancer, 42,* 280–281. doi:10.1016/j.ejca.2005.11.007

Substance Abuse and Mental Health Services Administration. (2013). *Results from the 2010 national survey on drug use and health: Summary of national findings, NSDUH series h-41, HHS publication no. (SMA) 11-4658*. Rockville, MD: Author.