

Exploring the Risk of Substance Abuse Development Among Adolescents

Lauren E. Gray

MCPHS University

Abstract

Substance abuse (SA) is a complex problematic phenomenon that continues to affect the young population, particularly adolescents. Research shows that this epidemic involves many different factors leading up to SA initiation. Common psychological, social, and familial factors are discussed in this literature review. Adolescents can present with behavioral risk factors as a result of internal or external experiences both past and present. Neuman's Systems Model serves as a theory for understanding how SA can alter multiple aspects of an individual's life, as well as their families and vice versa. For advanced practice registered nurses (APRNs), early identification of these risk factors could aid in primary prevention interventions for these adolescents. Additionally, this literature review will discuss specific screening tools currently available for APRNs to use in practice and explore whether they have proven to be beneficial for future prevention efforts. The results of research conducted to identify risk factors for development of SA suggests the need for increased recognition of well-developed screening tools to be used in primary care settings by APRNs.

Keywords: substance abuse, adolescents, screening, primary care, addiction, risk factors

Exploring the Risk of Substance Abuse Development Among Adolescents

Substance abuse (SA) continues to remain a growing epidemic worldwide today with approximately 200 million individuals using illegal drugs each year (Gray, 2015; Smith & Estefan, 2014). A topic of increasing concern is substance use and abuse among adolescents. Substance abuse and substance use disorders (SUD) are highly prevalent among adolescents in the United States and around the world today. An estimated 37% of American adolescents aged 12-17 years reported misusing drugs or alcohol in 2012 and 7.9% were diagnosed with a SUD (Pilowsky & Wu, 2013). Gray (2015) reported that factors may contribute to the development of SUD among adolescents, including psychological, social, and familial considerations. Previous research shows that individuals in this age range could be at greater risk for developing SUDs partly due to their unmatured developing part of the brain responsible for impulse control and risk-taking behaviors (Dougherty et al., 2015; Schneider et al., 2012). Apart from the previous suggestion, adolescence often experience increased pressure to be socially accepted by their peers, while also attempting to fulfill the expectations of their families (Gray, 2015).

According to Gray (2015), mixing everyday life stressors, unstable familial support, and struggling to find their own identity, adolescents are susceptible to mental health disorders such as depression. Mental health disorders and SUDs often coincide, with a majority of the literature discussing the self-medication hypothesis as playing a major role in this phenomenon (Gray, 2015). This idea proposes that those who abuse substances do so to ease or relieve the pain of trauma, negative affect, and psychological disorders (Benjet, Borges, Medina-Mora, & Mendez, 2013; Gray, 2015). Taylor (2011) proposed that depression often accompanied additional psychological disorders such as SA, eating disorders, and anxiety. Among the many barriers of

treating mental health disorders it is well documented that screening adolescents within primary care visits is inadequate (Gadomski et al., 2014).

Additional research highlights how peer influences make a dramatic increase during adolescence, furthering the risk of experimenting with substances in order to be socially accepted (Ramirez, Hinman, Sterling, Weisner, & Campbell, 2012). There is a strong connection between familial alcoholism, illicit drug use, and the impact of this environment on adolescents risk for developing SUDs (Gray, 2015; Peleg-Oren, Hospital, Morris, & Wagner, 2013). Understanding how friendships, peer acceptance, and familial support play a role in the development of substance use and abuse was found to initiate positive outcomes for adolescents (Ramirez et al, 2012, as cited in Gray, 2015). As previously stated by Gray (2015), some may think of adolescence as a time of happiness, playfulness, and growth, but unfortunately this is not always the case for many individuals; what may be going on internally among these adolescents can often lead to detrimental effects for their future.

SA among adolescents is a topic significant to advanced practice nursing in a number of ways, but there appears to be a lag in research on prevention efforts and reliable tactics that can be performed by APRNs in practice (Gray, 2015). APRNs, especially in primary care practices, are often in the forefront for screening adolescents during their annual well visits. Gray (2015) highlighted that being aware of common behaviors and risk factors adolescents portray, placing them in danger of developing SUDs, should be well recognized by APRNs. Although there has been an increase in recognizing SUDs as an epidemic throughout the media, there seems to be a gap in the literature regarding successful screening methods and interventions that can be performed by health care providers (HCP) to combat this disease (Gray, 2016).

While screening for SUDs among adults has been extensively studied with the US Preventative Task Force (USPSTF) issuing recommendations for screening and counseling, the same for the adolescent population has received less attention from researchers and clinicians (Gray, 2015; Pilowsky & Wu, 2013). Although the World Health Organization and American Academy of Pediatrics sanctions to screen all adolescents, most providers still do not adhere to these guidelines (Kelly et al., 2014). Strobbe (2013) reported that SUDs are a trending healthcare concern, yet few HCP have received sufficient education and training to prepare them to address these growing challenges in their practices (Gray, 2016). Therefore, this project is a systematic literature review regarding SA development among adolescents with hopes to highlight how APRNs can play a part in primary prevention efforts.

Study Purpose and Research Questions

The aim of this literature review is to explore and identify what has already been discovered regarding the risks and behaviors of adolescents that contribute to SUD development. Furthermore, this scholarly project will also intend to determine whether screening for risk factors among adolescents, that may lead to SUDs, serves benefit to primary prevention efforts performed by APRNs. The research questions for this project are: What are common risk factors among adolescents for substance abuse development? Does early identification of risk factors decrease substance abuse development among adolescents in the primary care setting? If so, what reliable screening tools are available for APRNs to integrate into primary care that are beneficial for future prevention and counseling interventions (Gray, 2016)?

This project will begin by reviewing common risk factors adolescents encounter that have often led to SUD development, by identifying common themes throughout evidence-based practice literature published within the previous five years. After categorizing these themes,

research will be explored regarding specific screening tools that were formulated for adolescents in the primary care setting. One objective is to identify whether the screening tools that are currently available could be beneficial for APRNs to easily identify risk factors for SUDs among adolescent patients. Finally, the research may identify whether early identification of risk factors for substance use and abuse using screening tools has been found to decrease the incidence of SUDs for adolescents (Gray, 2016).

Completing this extensive integrative literature review intends to accomplish risk factor identification, primary prevention, and early intervention tools for SUDs that could be implemented by APRNs when caring for adolescents. This will allow for improved education efforts for adolescents, families, schools, and healthcare workers and may serve as a stepping stone for future research. As the current focus has begun to shift toward primary prevention and early intervention, this project will serve to increase APRNs awareness on early recognition of signs for impending SA before it progresses to a SUD (Gray, 2016). By gaining a greater wealth of knowledge on this crucial topic, APRNs could heighten their awareness and open up further investigation of successful interventions that will aid in prevention and early detection of SUDs among adolescents in the primary care setting (Gray, 2016).

Methodology

Data Retrieval

To begin researching the topic of SA among adolescents, I used the Cumulative Index to Nursing and Allied Health Literature (CINAHL) with full text database to search for peer reviewed scholarly journal articles. My initial search keywords included *substance abuse*, *adolescents*, *adolescence*, *nursing*, and *addiction*. While furthering my research, additional search keywords included *screening*, *primary care*, and *advanced practice nursing*. Many

articles were found by initially typing in substance abuse in the search box then using adolescence as a second term combining them with the operator and. Additionally, using the terms screening and primary care with the operator term or generated several articles on previously devised SA screening tools for adolescents. To find both qualitative and quantitative research articles, I included both options separately in the search box and clicked on abstract from the drop down menu to the right. I searched for articles published between 2011 and 2016 and narrowed my search by using the English language, peer reviewed, and research article options before continuing.

Aside from using both qualitative and quantitative primary research articles, I also found some resourceful secondary sources on CINAHL. For example, a previous literature review that discussed multiple families' experiences on parenting adolescents with SUDs and sources offered suggestions for prevention and treatment (Smith & Estefan, 2014). A few primary research studies that were conducted more than five years ago, were included because of how well they pertained to the topic. The quality of studies was evaluated by reviewing the validity and reliability of each study. Also, reviewing whether the project aim matched the study results, how extensive the study limitations where, and whether the sample size was deemed adequate. Subsequently, evaluating the citations used at the end of each study noting how dated the sources where. I had to exclude a few studies that were conducted outside of the United States because while the risk factors among adolescents are similar, the healthcare systems and accessibility to routine health visits are drastically dissimilar.

Theoretical Framework

Researching SA among adolescence provides a wide array of perceptions and theories that support an understanding of what places individuals at risk for this damaging behavior

(Gray, 2015). Betty Neuman's Systems Model is one theory that can be applied to this topic and is often implemented in other mental health nursing issues. The foundation of Neuman's theory suggests nursing as a system with the energy surrounding the system either moving the individual away or toward stability (Smith & Parker, 2015). Identifying these forces, often referred to as stressors, propose that clients' behaviors are signs and symptoms of instability; These signs and symptoms are often easily recognized, warranting an intervention to positively influence the clients' system (Gray, 2015).

Neuman believed that the system included five separate factors all working as one; physiological, psychological, sociocultural, developmental, and spiritual (Gray, 2015; Smith & Parker, 2015). This theory relates to the common themes extrapolated from literature on SA among adolescents because when one part of an individual's life steers them from stability, the whole system is affected. Gray (2015) discussed that Neuman's Systems Model also relates to the familial effects of SUDs among adolescents, what affects one family member frequently impacts others in some form. One study, based on Neuman's Systems Model, explored the concept of wellness through the perceptions of youth themselves explaining the relationship between adolescent well-being and development (Spurr, Ogenchuk, & Walker, 2012). Alarming, the researchers found that youth reported no associations between smoking, drug or alcohol use, and wellness suggesting they may fail to recognize the potential health issues this behavior entails.

Spurr et al. (2012) used Neuman's theory as a basis for the study because of its broad, comprehensive, holistic perspective suitable for understanding adolescent wellness and the complex developmental dimensions it can encompass. Neuman's Systems Model allows for a simple understanding of how risk factors can place adolescents in danger of SUDs, or alteration

of their own system; in this case the system symbolizes wellness. By using the framework as a foundation for this literature review it may support identifying how APRNs can play an active role in reducing instability for adolescents. Nursing actions, in this case early intervention by APRNs, could potentially keep the system working in the right direction to promote wellness and stress reduction strategies (Gray, 2015). As the current focus has begun to shift toward primary prevention and early intervention, this project will serve to increase APRNs awareness on early recognition of signs for impending SA before it progresses to a SUD.

Critique of Literature

After analyzing research for this literature review there were easily identifiable themes that were extrapolated to summarize common risk factors for SA among adolescents. These themes include psychological, social, and familial considerations. While some studies aligned with each other, others had opposing findings that provided different perspectives contributing to the body of knowledge. For example, research discussing depression as a prime factor to developing SUDs base their findings on the self-medication hypothesis for reasons including feeling sad, stressed, helpless, or hopeless (Benjet et al., 2012; Taylor, 2011). Thompson, Connelly, Thomas-Jones, and Eggert (2013) linked SA as cause for depression along with other adverse behaviors such as aggression and suicide.

Some studies discuss social networks, particularly peers, having a strong influence in SA and development of SUDs (Harlow & Roberts, 2010; Ramirez et al., 2012). Many others report familial influences play a critical role whether from genetics, poor support systems, SUDs among parents, or lack of parent-child bonding (Dougherty et al., 2015; Hicks, Iacono, & McGue, 2012; Hummel, Shelton, Heron, Moore & Bree, 2012; Smith & Estefan, 2014; Peleg-Oren, Hospital, Morris, & Wagner, 2013). Though there were some inconsistencies in cause

and effect of SUDs, generally all the studies showed similarity in accepting SA as a complex comorbidity.

Among the studies regarding SA screening methods, growing research includes using computer or other electronic devices to briefly screen adolescents prior to their encounter with a provider (Gadomski et al., 2015; Harris et al., 2012; Kelly et al., 2014). These tools include questions about feelings, behaviors, and actions that would warrant discussion or intervention during visits. Adolescents also reported increasing honesty when using paper or electronic screening when compared to face-to-face interviewing techniques. Other studies report the well-known CRAFFT tool as the most widely used and best for use in a primary care setting (Gryczynski et al., 2014; Pilowsky & Wu, 2013). Throughout the research most discussion is focused on screening shifting from provider interviewing or paper forms, to self-administered computerized tools due to time constraints and improved adolescent response.

Strengths and Limitations

There were many strengths throughout the studies such as consistent findings, positive outcomes, and use of reliable tools. One study displayed strength when comparing risk factors among youth with and without family histories of SUDs from pre-adolescence into late-adolescence, which represents a vulnerable time for onset of SA (Dougherty et al., 2015). Although many participants dropped out by mid-adolescence causing limited longitudinal results. Another study offered specific suggestions for interventions by APRNs in practice to increase assessment of positive peer networks and identifying their role in participation for adolescent program designs and improved clinical training (Ramirez et al., 2012). Ramirez et al. (2012) also showed strength in limiting bias by not informing the clinicians conducting interviews which adolescents were active participants.

Many studies included in this literature review were conducted using a structured or semi-structured interview technique yielding both positive and negative results. One study using self-reporting interview techniques allowed for adolescent's own perceptions but also posed the risk of over or under-reporting response bias (Peleg-Oren et al., 2013). Thompson et al. (2013) used a previously devised self-report survey that was commonly and successfully used for other cross-sectional and longitudinal studies increasing the reliability and validity. Other studies used a mixed methods technique to include both qualitative and quantitative data allowing for a semi-structured interview. Researchers found this method gave participants the opportunity to express their own viewpoints while also adhering to a structured format. Gadowski et al. (2015) used appropriate methods of pre-screening followed by face-to-face interviews to assess the effects on within-visit processes, allowing more time for discussion rather than questions asking.

There were numerous limitations noted in each study that may have caused inconsistencies or inaccurate results. For example, some studies sample populations included only minorities, certain genders, or current substance abusers, causing inconsistent patterns among other groups. Several studies required inclusion criteria or allowed for self-selection participation decreasing the generalizability to other adolescent populations. For example, one required participants with a history of SA, many whom reported currently abusing illicit drugs and alcohol which may have altered the results (Lankenau et al., 2012). Similarly, a convenience sample of youth that were current participants in a treatment program was used narrowing the study results for adolescents who may not currently be involved in treatment (Gonzales, Anglin , Beattie , Ong, & Glik , 2012). However, using an inclusion criteria is appropriate for some studies, such as ones focusing on specific adolescents with and without family histories of SUDs.

Adequate sample sizes were variable, some studies chose to use a survey instruments making it easier to administer to large groups of adolescents, while others chose to do individual interviews among small groups. Benjet et al. (2012) showed strength in generalizability by using a sample population that included adolescents who no longer attend school, since many studies on this topic are school-based. One randomized controlled trial was performed in a primary care setting allowing adolescents who did not attend school to be involved and offered opportunity for primary prevention (Walton et al., 2013). Harlow and Roberts (2010) included over 2,000 participants to explore psychological and social factors of bullying leading to SUDs among two states, but most were white narrowing the samples generalizability. A positive finding was the use of participants from both urban and rural areas to vary the sample population.

Gaps in Literature

When researching how APRNs play a role in identifying risk factors and implementing this knowledge for prevention and early intervention methods for adolescents struggling with addiction, a gap in the literature can be identified (Gray, 2015). Previously devised screening tools address current drinking and drug use behaviors, but fail to address the feelings and events leading up to SA (Gray, 2015). Some studies compare different screening methods, but don't include long term outcomes after delivering brief interventions (BIs) in primary care settings. Only one study discussed the importance of APRNs assessing and openly discussing peer networks and family problems with adolescents and inviting them to verbalize their feelings (Ramirez et al., 2011). Screening alone appears easy and the current tools used in practice may be reliable but HCPs need to increase education on how to deal with positive screens, which can be problematic when put under time constraints (Pilowsky & Wu, 2013).

Although it can be hypothesized that APRNs are in position to make a big impact on SUDs long term outcomes, it was difficult to find primary research supporting this hypothesis (Gray, 2015).

Synthesis of Literature

Exploration of Risk Factors

Psychological considerations. Research has shown that adolescents suffering from mental illness including depression, suicidal behavior, and aggression have been linked to abusing illegal substances (Gray, 2015; Taylor, 2011). Common reasons adolescents reported turning to illicit drugs and alcohol included feelings of sadness, hopelessness, helplessness, stress, inability to sleep, and feeling like a failure (Taylor, 2011). All of the symptoms reported are well accepted warning signs of depression, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV); this state of mind can often guide adolescents into using substances to make them feel better about themselves and their lives (Taylor, 2011). Inversely, additional research connected relationships between SA leading to depression, aggression, and suicidal behavior (Thompson, et al., 2013). Thompson et al. (2013) concluded that both male and female substance abusers shared similar feelings and displayed behaviors consistent with adolescence depression often leading to suicidal ideation.

An estimated 40% of adolescent substance abusers reported suffering from a secondary psychiatric illness, apart from a majority of adolescents not meeting the DSM-IV criteria of five or more depressive symptoms (Gray, 2015; Taylor, 2011). Adolescents admitted to using opioids to self-medicate for depressive symptoms and escape from their own reality, many obtaining these opioids from a previous prescription for pain or from someone else (Lankenau et al., 2012). Taylor (2011) also determined that a majority were self-medicating to help diminish their depressive symptoms and continued to abuse substances until it led to a complete

dependence disorder. Gonzales et al. (2012) reported that youth considered SUDs a behavioral lifestyle rather than a life-long chronic illness; many thought they could stop using at any time with no negative consequences.

Thompson et al. (2013) reported a diagnosis of depression as a risk factor for developing a SUD, and furthermore untreated depressive symptoms are believed to play a major role in adolescents risk-taking behavior. Likewise high levels of depressive symptoms were reported by a group of adolescent African American female adolescents who not only turned to using illicit substances but were more likely to report risky sexual behavior and sexually transmitted infections when compared to lower reports of depression (Jackson, Seth, DiClemente, Lin, 2015). Multiple studies include depressive symptoms as a major red flag for SA and SUD, even if they do not meet criteria for clinical depression or they are in a pre-depressive state. This suggestion indicates the need for further investigation to even minute subjective reports from adolescents of feeling depressed.

Certain childhood behavioral disorders, such as attention deficit hyperactivity disorder (ADHD), conduct disorder, and oppositional defiant disorder have also been identified as strong predictors for SADs (Gray, 2015; Hicks et al., 2012). Hicks et al. (2012) found these disorders habitually led to antisocial behavior, disengaged personalities, impulsivity, sensation seeking, rebelliousness, and aggression. Gray (2015) noted that these behaviors combined with the stressful period of adolescence increase the risk for acting out and served as precursors to self medicate with illicit substances; therefore, APRNs diagnosing these behavioral disorders should also be screening for SA risk factors. Opposing research addresses a relationship between prescribing stimulant treatment for ADHD and development of SUDs. Nelson & Galon (2012) concluded that despite this relationship prescribing stimulants remains appropriate to treat

ADHD if additional interventions for screening, patient and family education, and counseling are integrated into the treatment plan.

Research conducted linking risk-taking and the adolescent reward system made it interesting to note how dysfunction in the reward-related brain areas, such as the ventral striatum, were reportedly discovered among addicts using positron emission tomography and functional MRI (Schneider et al., 2012). Results from this study suggest a neural explanation for how an individual may be more apt to develop a SUD. Schneider et al. (2012) concluded that behavior patterns including impulsivity and risk-taking among adolescents could predict SA behavior in their future. The results of studies like the aforementioned offer a suggestion to include general risk-taking as a vulnerability factor for SA and may be beneficial for providers to evaluate for on a regular basis.

Social influences. Adolescent's lives typically revolve around socialization and peer relationships which can place them at increased risk for using drugs and alcohol for several different reasons (Gray, 2015). One study concluded that youth experiencing difficulties in school were socially isolated from school-based peer and adult relationships; placing them in stressful situations outside of the school setting (Thompson et al., 2013). Outside stressors, such as family life or neighborhood influences, could negatively impact school performance leaving these adolescents with minimal social support (Gray, 2015). Adolescents who turned to abusing drugs and other substances reported difficulty in forming meaningful friendships and lacked stable support systems (Harlow & Roberts , 2010). School difficulties resulting in dropout were shown to cause increased risk of drug use, fighting, risky sexual behavior, accidents, and homicide among adolescents (Hummel, et al., 2012; Thompson et al., 2013).

Gray (2015) reported that bullying among youth was reported to contribute to feelings of sadness, isolation, and loneliness. Harlow and Roberts (2010) suggested that victims of bullying were led into using drugs and alcohol as a social gateway. Adolescents may feel using drugs and alcohol will cause them to be more socially accepted by their peers, diminishing their feelings of loneliness and isolation (Gray, 2015). Taylor (2011) found a trend in redundant responses reported by adolescents when asked why they chose to misuse substances, included wanting to escape life's problems and feel better about themselves and their daily stressors. Research emphasized that peer influences become critical during adolescence and two themes emerge from the results; that adolescents either use drugs and alcohol because of pressure from their peers, or from lack of peer friendships and support (Gray, 2015; Ramirez et al., 2012; Thompson et al., 2013). Lankenau et al. (2012) added that a number of adolescents reported their initiation into drug use occurred in social group settings, such as parties, a friends house or school.

A school setting serves as adolescents' primary source of socialization and bullying among peers is a growing concern for many. Harlow and Roberts (2010) reported that victims of bullying sense their ability to succeed diminishes over time, causing them to care less about school and concentrate more on finding ways to make themselves feel better. Adolescents attempting to forget about their troubles and increase their confidence can often escape down a path of using illicit drugs and alcohol (Gray, 2015). Literature suggests that warning signs of troubled adolescents, including reports of sadness and isolation, warrant the need for intervention; whether from parents, teachers, or social workers (Thompson et al., 2013). APRNs have been found to play a role in risk factor screening and providing care for adolescents in school-based or community health care centers (Ramirez et al., 2012). Identifying behavioral

problems and assessing peer networks could be an important tool for APRNs to initiate primary prevention and early indication of social stressors leading to SADs (Gray, 2015).

Familial environment. Addiction has been referred to as a family systems disease, simply because the events that occur throughout the life of an addict often affect the family as a whole; This idea reflects on Neuman's theory (Gray, 2015; Smith & Estefan, 2014).

Adolescents with a positive family history for alcohol and other drug use disorders have been found at increased risk for developing SADs when compared to adolescents without (Dougherty et al., 2015; Hummel et al., 2014). It is documented that adolescents who were raised witnessing a parent or other family member abusing drugs and alcohol can hold feelings of resentment, isolation, decreased parental support, negative social skills, and self-blaming coping skills (Peleg-Oren et al., 2013). As formerly stated, feelings of isolation and decreased peer or parental support, combined with depressive symptoms can be catastrophic risk factors for SA among adolescents (Gray, 2015).

A remarkable number of adolescents who struggle with addiction report growing up in a household where a parent or family member also suffered from a SAD (Lankenau et al., 2012). A number of these adolescents started using drugs by obtaining substances, such as prescription opioids, from their own family members. While some say it is genetics, other researchers have found that SA entails much more than that, and environmental, social, and psychological factors must be considered (Gray, 2015). It has been discovered that parents who are affectionate, give praise, offer open communication, and model positive behavior for their children are likely to raise adolescents who show similar traits (Peleg-Oren et al., 2013). Dougherty et al. (2015) concluded that individuals with a positive family history of SA had deficits in impulse control;

when combined with increased risk-taking behavior normally seen during adolescence, increased susceptibility for SADs occurred as a result (Gray, 2015).

An important finding from a study conducted on alcoholic fathers and the impact of problematic maternal communication for adolescents, showed a consistency in self-blaming coping skills and negative social skills, heightening the risk of SUDs (Peleg-Oren et al., 2013). A lack of maternal connection, undercontrol, and absence of discipline for adolescents was a direct result of the SA behavior development. It appears that there is a strong connection between maternal-child relationships and SA behaviors (Gray, 2015). Smith and Estefan (2014) noted that when mothers experience adolescents with SADs, they show feelings of self-blame, shame, and feelings of failing themselves.

Hummel et al. (2012) also reported low levels of positive parent-child communication and monitoring resulted in increased substance use. Additionally, adolescents tend to abuse substances as a coping mechanism for poor family relationships that include hostile environments and little affection (Hummel et al., 2014; Peleg-Oren et al., 2013; Smith and Estefan, 2014). Parental criminal behavior also dramatically raises the odds for a child to develop risk taking behaviors, impulsivity and novelty seeking whether from a high stressful environment, genetics, or growing up witnessing violence and other negative experiences (Benjet et al., 2012). Gray (2015) addressed this connection to shine the light on addiction as a family systems disease and one could wonder who may suffer the most.

Screening Methods

Screening adolescents in primary care settings could potentially serve as a venue for early detection of substance use and abuse, but research has shown that adolescent screening rates need improvement (Harris et al., 2012). Since a majority of adolescents in the United States

access the healthcare system, primary care visits present ample opportunity for identification and intervention among current and at risk substance users (Kelly et al., 2015). Increasing awareness on screening tools have shown to be reliable and beneficial for both parties involved and may contribute to improving these rates. There's no secret that limited provider time in primary care settings is a problem and may pose barriers on thorough screening showcasing the importance of using brief, non intrusive, and easily administered tools. However, even with knowledge of potential benefit, research still indicates continued lack of screening and counseling for adolescents during annual well visits particularly sensitive subjects such as mental health (Gadomski et al., 2015; Harris et al., 2012).

Questionnaires. To date the most studied instrument to detect SA and related problems is the CRAFFT, a brief screening instrument recommended by the American Academy of Pediatrics; it is the most often used tool to screen adolescents. One study reported one in seven adolescents screened positive with an overall 11.3% of patients engaging in problematic use (Pilowsky & Wu, 2013). The CRAFFT acronym addresses Car, Relax, Alone, Forget, Friends, and Trouble in regards to drug or alcohol use as a yes or no questionnaire with a score of more than 2 identifying risky behavior. An identified weakness for the CRAFFT was the lack of addressing tobacco use and screeners are also unable to differentiate between specific substances attributing to problems (Gryczynski et al., 2013; Kelly et al., 2014).

The Alcohol Smoking and Substance Involvement Screening Test (ASSIST) has been supported by the World Health Organization (WHO) for development and validity (Gryczynski et al., 2013). This tool categorizes patients into low, moderate and high-risk in order to properly guide clinical interventions. Unlike the CRAFFT, the ASSIST addresses tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, inhalants, sedatives, hallucinogens, and opioids

using a lengthy questionnaire about SA and related issues. Researchers conclude that although the ASSIST provides more detailed responses and includes specific substances used by adolescents it takes longer to administer and may not be feasible in a busy primary care setting. Recognizing this as a barrier, the ASSIST-lite was comprised as a brief option for screening and demonstrated high accuracy in identifying SADs (Gryczynski et al., 2013). Pilowsky and Wu (2013) noted that when compared to similar screening methods the CRAFFT still holds the most consistent data to support its use in primary care settings.

Computer based screening. While the CRAFFT, ASSIST, and ASSIST-lite offer their own strengths and weaknesses, a major drawback when conducting a face to face interview or questionnaire with adolescents is their reluctance to be honest about substance misuse and other related issues. To combat this barrier, Harris et al. (2012) developed a computerized screening and brief advice system (cSBA) allowing adolescents to complete the screen prior to the encounter with their provider leaving more time for educational opportunities during the visit. The researchers primary objective was to evaluate the immediate, short, and long-term effects of the cSBA system when screening adolescents for SA (Harris et al., 2012).

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) also devised a brief screening tool addressing frequency of alcohol use in past year and that of friends. Kelly et al. (2014) examined the later extended version to include tobacco and drug use formulating the Brief Screener for Tobacco, Alcohol, and Other Drugs (BSTAD) that would be self-administered on an iPad. This study found the BSTAD to be a promising instrument for use in identifying problematic substance use in pediatric settings and added that even reports of low frequency of use may warrant further intervention. Participants also reported that conducting the self-

administered screen on an iPad was preferred over interviewed administration (Kelly et al., 2014).

Similar to the aforementioned study, Gadomski et al. (2014) researched how the DartScreen, a computerized self administered adolescent screener, affected the patient-provider interaction. The study focused on data gathering methods, education, counseling, and mental health discussion. The idea was the screener would shift communication from data gathering to increased opportunity for adolescent counseling of risk behaviors or sensitive issues. The results reflected positive outcomes concerning adolescents reporting of psychosocial, mental health issues, and their ratings of PCPs in terms of engagement and responsiveness (Gadomski et al., 2014). PCPs reported improvement in visit organization, less question asking, and more focus on patients personal concerns, therefore causing increased efficiency overall (Gadomski et al., 2014). Although discussion of SA did not change, knowing from previously discussed literature that mental health issues often lead to SADs and other risky behaviors this study demonstrates benefit for risk reduction and primary prevention efforts.

A randomized controlled trial comparing the efficacy of brief interventions (BIs) delivered from a therapist versus a computer showed remarkable results on preventing cannabis use among adolescents (Walton et al., 2013). Major findings from this study included an increase in prevention and decrease in use of cannabis and other drugs with the method of interactive computer technology delivering BIs. Using computers for primary prevention efforts focused in a primary care setting could have a major public health impact (Gadomski et al., 2014; Harris et al., 2012; Kelly et al., 2014; Walton et al., 2013).

A visit to primary care offices may provide an at risk adolescent with an opportunity for change, if receptivity can be improved. With an increase in technology use among adolescents

and demand for PCPs to increase workload, the benefit to using computer technology for screening adolescents is in plain sight. Research concluded that by using a computerized screening tool primary care providers (PCPs) increased counseling opportunities, patient satisfaction, and an overall reduction in SA among adolescents. Taking an average of 5 minutes of patient time prior to visits and 2 to 3 minutes of provider time to conduct BIs resulted in positive outcomes for both parties (Harris et al., 2012; Kelly et al., 2014). These findings open the door for a whole new approach that is not currently seen in many primary care practices today.

Discussion

Implications for Practice

An important finding in the literature is that a majority of adolescents refuse to admit that SUDs are considered a life-long chronic illness, rather they perceive it as a behavioral lifestyle (Gonzales et al., 2012). Rates of relapse among addicts are unfortunately high; therefore, recommendations for APRN practice should include increasing education for adolescents regarding the seriousness of SA (Gray, 2015). Gonzales et al. (2012) explored adolescents' feelings toward risk taking behaviors and most reported feeling they could stop using at any time without risk of relapse. This finding suggests that the initial step for APRNs and other health care providers to take is opening adolescents eyes to the negative long-term consequences of SA (Gray, 2015).

Family environment was shown to have a major impact on adolescents lifestyle choices and behaviors; therefore, educating family as well as adolescents regarding the risk factors is equally important (Gray, 2015). Smith and Estefan (2014) suggested that families should be treated in a holistic manner when an adolescent is suffering from a SUD. Screening in primary

care offices should also include family problems and home environment questions for all adolescents to gain a better understanding of their everyday support systems (Gray, 2015). Adolescence marks a period of increased prevalence for risk-taking and experimentation; often youth fail to consider consequences and ability to modify behavior (Hicks et al., 2012). In addition to screening for behavioral, social, and familial risk factors, APRNs should also be aware of depressive signs and symptoms; all of these efforts can promote preventative care (Gray, 2015).

APRNs in primary care settings have the opportunity to develop established trusting relationships with their patients, allowing for open communication at annual well visits. Since SA among adolescents continues to be one of the nation's leading public health problems, APRNs will need effective strategies for identifying risk factors through useful screening techniques (Harris et al., 2012). When adolescents visit primary care clinics the opportunity for prevention programs and teachable moments are presented to providers, with an ultimate goal to increase their accessibility to interventions that reduce SUD development (Gray, 2016; Walton et al., 2013). APRNs are known to spend more time with their patients leaving more opportunity to assess peer networks and family environment, which can be completed when taking medical and social histories and screening for SA. The current literature on screening tools and interventions for use in primary care settings sound promising but the rates of SA among adolescents continue to rise. With SA related deaths at an all time high, major change is necessary to work on shifting care from secondary or tertiary care to primary prevention.

Implications for Future Research

Further research could focus on successful educational opportunities and interventions that offer useful knowledge and promote a desire for behavioral change among adolescents at

risk for developing SADs (Gray, 2015). Another important avenue for future research is how APRNs can properly assess personal and familial characteristics, such as parenting style, early on during well visits that may be cause for concern and early intervention. Knowing how peer relationships can affect the initiation into SA additional research could focus on how APRNs can successfully get involved in school-based programs. After identifying risk factors through screening tools during primary care visits, more research is necessary to educate APRNs on BIs that can be used in a fast-paced environment successfully. Adolescence is thought to be the most common age where experimenting with illicit substances is initiated; though there is overwhelming research on the topic of addiction, surprisingly there is less attention to SA among adolescents specifically. Researching this population at risk should be increased and continuous in order for HCP, such as APRNs, to discover new and better ways of dealing with addiction among adolescents in the primary care setting.

Conclusion

The synthesis of results discussed, from research that explored risk factors and screening techniques for adolescents and SADs, has shown to be multi-factorial. As HCPs continue to fight the battle of addiction among adolescents, research indicates the need for using an integrated approach when preventing and treating SADs. Incorporating the idea that mental illness, social isolation, familial experiences, and lack of understanding lie beneath the surface of SA development in adolescents, can bring Neuman's Systems theory into perspective. There is no single cause for adolescent's desire to misuse drugs and alcohol, but rather a cry for help or an escape from reality. More research is needed to uncover APRNs individualized role and the full potential for screening and useful interventions within primary care to prevent SUDs among adolescents. As APRNs continue to emerge as primary care providers, early identification of

adolescents inner struggles could provide them with the opportunity to escape from the world of addiction.

References

- Benjet, C., Borges, G., Méndez, E., Casanova, L., & Medina-Mora, M. E. (2014). Adolescent alcohol use and alcohol use disorders in Mexico City. *Drug & Alcohol Dependence, 136*(43-50). doi:10.1016/j.drugalcdep.2013.12.006
- Dougherty, D. M., Lake, S. L., Mathias, C. W., Ryan, S. R., Bray, B. C., Charles, N. E., & Acheson, A. (2015). Behavioral impulsivity and risk-taking trajectories across early adolescence in youths with and without family histories of alcohol and other drug use disorders. *Alcoholism: Clinical and Experimental Research, 39*(8), 1501-1509. doi:10.1111/acer.12787
- Gadomski, A. M., Fothergill, K. E., Larson, S., Wissow, L. S., Winegrad, H., Nagykaldi, Z. J., & ... Roter, D. L. (2015). Integrating mental health into adolescent annual visits: Impact of previsit comprehensive screening on within-visit processes. *Journal of Adolescent Health, 56*(3), 267-273. doi:10.1016/j.jadohealth.2014.11.011
- Gonzales, R., Anglin, D., Beattie, R., Ong, C. A., & Glik, D. (2012). Perceptions of chronicity and recovery among youth in treatment for substance use problems. *Journal of Adolescent Health, 51*(2), 144-149. doi:10.1016/j.jadohealth.2011.11.010
- Gray, L. (2015). *Exploring the risk of substance abuse development among adolescents*. Unpublished manuscript, School of Nursing, MCPHS University, Worcester, MA.
- Gray, L. (2016). *Exploring risk factors for substance abuse development among adolescents*. Unpublished manuscript, School of Nursing, MCPHS University, Worcester, MA.
- Gryczynski, J., Kelly, S. M., Mitchell, S. G., Kirk, A., O'Grady, K. E., & Schwartz, R. P. (2015). Validation and performance of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) among adolescent primary care patients. *Addiction, 110*(2),

240-247. doi:10.1111/add.12767

Harlow, K. C., & Roberts, R. (2010). An exploration of the relationship between social and psychological factors and being bullied. *Children and Schools, 32*(1), 15-26.

Harris, S. K., Csamy, L., Sherritt, L., Starostova, O., Van Hook, S., Johnson, J., ... Knight, J. R. (2012). Computer-facilitated substance use screening and brief advice for teens in primary care: An international trial. *Pediatrics, 129*(6), 1072-1082.

doi:10.1542/peds.2011-1624

Hicks, B. M., Iacono, W. G., & McGue, M. (2012). Index of the transmissible common liability to addiction: Heredibility and prospective associations with substance abuse and related outcomes. *Drug and Alcohol Dependence, 123S*, 18-23.

doi:10.1016/j.drugalcdep.2011.12.017

Hummel, A., Shelton, K. H., Heron, J., Moore, L., & Bree, M. M. (2013). A systematic review of the relationships between family functioning, pubertal timing and adolescent substance use. *Addiction, 108*(3), 487-496. doi:10.1111/add.12055

Jackson, J. M., Seth, P., DiClemente, R. J., & Lin, A. (2015). Association of depressive symptoms and substance use with risky sexual behavior and sexually transmitted infections among African American female adolescents seeking sexual health care. *American Journal of Public Health, 105*(10), 2137-2142.

doi:10.2105/AJPH.2014.302493

Kelly, S. M., Gryczynski, J., Gwin Mitchell, S., Kirk, A., O'Grady, K. E., & Schwartz, R. P. (2014). Validity of Brief Screening Instrument for Adolescent Tobacco, Alcohol, and Drug Use. *Pediatrics, 133*(5), 819-826. doi:10.1542/peds.2013-2346

- Lankenau, S. E., Teti , M., Silva , K., Bloom , J. J., Harocopos , A., & Treese , M. (2012).
Initiation into prescription opioid misuse among young injection drug users .
International Journal on Drug Policy, 23(1), 37-44
- Nelson, A., & Galon, P. (2012). Exploring the Relationship Among ADHD, Stimulants, and
Substance Abuse. *Journal of Child & Adolescent Psychiatric Nursing*, 25(3), 113-118.
doi:10.1111/j.1744-6171.2012.00322.x
- Peleg-Oren , N., Hospital, M., Morris , S. L., & Wagner , E. F. (2013). Mechanisms of
association between paternal alcoholism and abuse of alcohol and other illicit drugs
among adolescents. *Journal of Child and Adolescent Substance Abuse*, 22(2), 133-149.
doi:10.1080/1067828X.2012.730363
- Pilowsky, D. J., & Wu, L. (2013). Screening instruments for substance use and brief
interventions targeting adolescents in primary care: A literature review. *Addictive
Behaviors*, 38(5), 2146-2153. doi:10.1016/j.addbeh.2013.01.015
- Ramirez, R., Hinman , A., Sterling , S., Weisner , C., & Campbell , C. (2012). Peer influences on
adolescent alcohol and other drug use outcomes. *Journal of Nursing Scholarship*, 44(1),
36-44. doi:10.1111/j.1547-5069.2011.01437.x
- Schneider, S., Peters, J., Bromberg, U., Brassens, S., Miedl, S., Banaschewski, T., & ... Robbins,
T. (2012). Risk taking and the adolescent reward system: A potential common link to
substance abuse. *American Journal of Psychiatry*, 169(1), 39-46.
doi:10.1176/appi.ajp.2011.11030489
- Smith, J. M., & Estefan , A. (2014). Families parenting adolescents with substance abuse-
recovering the mother's voice: A narrative literature review. *Journal of Family Nursing*,
20(4), 415-441. doi:10.1177/1074840714554397

- Smith, M., & Parker, M. (2015). Betty Neuman's Systems Model. In *Nursing theories and nursing practice* (4th ed., pp. 166-177). Philadelphia, PA: F.A. Davis.
- Spurr, S., Bally, J., Ogenchuk, M., & Walker, K. (2012). A framework for exploring adolescent wellness. In *Pediatric Nursing*, 38(6), 320-326.
- Strobbe, S. (2013). Addressing substance use in primary care. *Nurse Practitioner*, 38(10), 45-53. doi:10.1097/01.NPR.0000433078.14775.15
- Taylor, O. D. (2011). Adolescent depression as a contributing factor to the development of substance use disorders. *Journal of Human Behavior in the Social Environment*, 21(6), 696-710. doi:10.1080/10911359.2011.583519
- Thompson, E. A., Connelly, C. D., Thomas-Jones, D., & Eggert, L. L. (2013). School difficulties and co-occurring health risk factors: Substance use, aggression, depression, and suicidal behaviors. *Journal of Child and Adolescent Psychiatric Nursing*, 26(1), 74-84. doi:10.1111/jcap.12026
- Walton, M. A., Resko, S., Barry, K. L., Chermack, S. T., Zucker, R. A., Zimmerman, M. A., ... Blow, F. C. (2014). A randomized controlled trial testing the efficacy of a brief cannabis universal prevention program among adolescents in primary care. *Addiction*, 109(5), 786-797. doi:10.1111/add.12469