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Integrating Substance Use Treatment Into Adolescent Health Care

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Abstract

Substance use (SU) problems are common among adolescents, a serious health risk for them and a major public health problem, but are inadequately addressed in most pediatric health care settings. Primary care offers an excellent context for SU assessment and treatment for adolescents and their families, offering better access and a less stigmatized environment for receiving treatment than specialty programs. This paper examines the literature on the integration of substance use treatment with adolescent health care, focusing on 2 areas: Screening, Brief Intervention, and Referral to Treatment (SBIRT) in Emergency Departments and Primary Care, and School- and College-Based Health Centers.

Keywords

Substance use; Adolescent; Pediatric; Psychiatric disorders; Behavioral health; Comorbidity; Screening, brief intervention, and referral to treatment; SBIRT; Alcohol; Drug; Emergency departments; Primary care; School-based health centers; SBHC; Health care; Integration; Assessment; Treatment

Introduction

Although behavioral health conditions such as substance use (SU) and psychiatric problems are common among primary care patients and may lead to or exacerbate comorbid medical conditions, the assessment and treatment of such conditions have historically been separated

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from primary care. SU treatment and medical and psychiatric services typically occur in separate, freestanding agencies, funding mechanisms are siloed, time and resources to develop integrated models of care are limited, differences and deficiencies continue in provider training across disciplines, and differences in treatment philosophy and clinical practice persist [1]. The field recognizes that many patients are not well-served by this fragmentation, particularly in regard to identifying and treating cases early in disease progression, and a now robust literature has demonstrated that for many patients, integrated SU, psychiatric, and medical care produces better outcomes. While the research has mostly involved adults, more recent studies show similar findings for adolescents. Compared with traditional care, integrated treatment, including screening and early intervention in medical settings, can more effectively treat, and in some cases prevent, the development of SU problems [1–3].

Although historically medical providers have played a limited role in SU treatment, influences from several quarters are improving the environment for integrating care. The Accountable Care Act supports the integration of behavioral and physical health, and recent state and federal parity laws require coverage for mental health and SU treatment equal to coverage for medical conditions. This encourages health plans to provide SU treatment in non-specialty care settings [4••]. Many national policy and research institutions (eg, Agency for Healthcare Research and Quality, American Society for Addiction Medicine, the Substance Abuse and Mental Health Services Administration, the Office of National Drug Control Policy, the National Institutes of Health) have developed initiatives to increase such integration. They include: development of brief, evidence-based screening instruments, physician training handbooks, targeted funding and other research initiatives, and national meetings focusing on integration. Congress has also recently appropriated funds to train medical residents to address SU problems [5]. These initiatives will increase organizational and provider attention to SU (much as happened with smoking) as a routine part of health care. Performance measurements for identification of SU problems (including for adolescents) are now being implemented through the National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS), and the adoption of electronic medical records and Common Procedural Terminology (CPT) codes for the identification and brief treatment of SU problems in primary care provide additional leverage to encourage screening and early identification.

Major healthcare policy institutions have provided leadership. The Institute of Medicine developed a framework for the provision of integrated care [6]. Recent reports from the Surgeon General suggested integration of care improvements in health care settings that treat adolescents with SU problems [7, 8]. More recently, the Milbank Memorial Fund's comprehensive report discusses the evidence-base for integrated care, and outlines several models for implementing various degrees of integration [9••]. The US Preventive Health Services Task Force, the American Medical Association and the American Academy of Pediatrics have all issued policy statements endorsing and encouraging the assessment and/or management of SU and other behavioral health disorders in pediatric primary care [10–12]. Similarly, adolescent health experts have called for routine adolescent SU screening and management in pediatrics [13•, 14].

SU and Adolescent Health

SU is a major contributor to health problems among youth and is a significant public health concern [15, 16]. Surveys of the U.S. adolescent general population assess the prevalence of severe SU disorders as high as 8 % [17], and as high as 19 % among those who have ever used alcohol or drugs [15]. The unmet need for treatment is huge; only about 7 % of US adolescents who need treatment receive it [17]. Less severe but risky use is even more

common among adolescents, and in a recent study of adolescent primary care patients, 15 % screened positive for an SU problem [18]. SU among U.S. teens has declined in recent years, but recent upticks in rates for several substances, including marijuana and synthetic marijuana [19], prescription opiates [20], and continuing high rates of risky practices such as binge drinking [21] are alarming.

Among adults it is now well-established that SU problems increase the risk for developing and exacerbating many medical conditions [22, 23]. For adolescents the evidence is more limited, but growing. Worse health status is associated with problem SU [24–26], including weight loss, eczema, headaches, irritable bowel syndrome, and peptic ulcer [27]. Heavy drinkers are more likely to be obese and have high blood pressure at age 24 [28]. Mertens and colleagues found that compared with matched controls without SU problems, adolescents with SU problems had a higher prevalence of asthma, benign uterine conditions, injury and overdoses, STDs, abdominal pain, sleep disorders, and sinusitis (all $P<0.05$) [29]. They also have higher rates of HIV, sexual risk behaviors, and violence [30, 31].

Adolescents with co-occurring SU and psychiatric problems are now commonly understood to be the rule rather than the exception [32, 33], and psychiatric comorbidities complicate treatment and can result in poorer outcomes [34]. SU treatment samples typically show higher rates of conduct disorder, oppositional defiant disorder, attention deficit hyperactivity disorder, depression, anxiety, post-traumatic stress disorder, and borderline personality than community samples [35, 36]. In a managed care study, over half the sample of adolescents had at least 1 psychiatric diagnosis, with significantly higher rates of depression, anxiety and neurotic disorders, major psychoses, and eating disorders than a group of matched controls without SU problems [3].

Adolescent SU frequently co-occurs with conditions and behaviors such as delinquency, poor academic performance, and suicide behavior, that increase the risk of poor health, psychological, and social outcomes [37]. It is also costly; estimated costs of U.S. underage drinking are $68 billion (in 2007 dollars) [38], and of drug use (adolescent and adult) at $181 billion (2002 dollars) [39]. Recent neuroimaging studies have demonstrated that the developing adolescent brain is highly vulnerable to the effects of SU [40•, 41, 42]. Thus early identification and treatment are critical for preventing adverse long-term medical and psychiatric outcomes.

Primary care offers an excellent context for SU assessment and treatment for adolescents and their families [43, 44]. Research suggests that adolescents with SU problems are as likely to utilize primary care as adolescents without SU problems [45]. Among adolescents seeking SU treatment in a managed care plan, 81 % had at least 1 primary care visit in the year before treatment [46]. During primary care visits, competing health problems may make addressing SU less likely, but may also give providers an entree for discussing SU.

Medical settings often offer better access and a less stigmatized environment for receiving addiction treatment than specialty programs. Adolescents and their families are receptive to screening and intervention in medical settings, and in fact perceive the quality of care to be higher when SU is addressed [47, 48]. This may be especially salient for ethnic groups or populations for whom these conditions are particularly stigmatized or who are less likely to seek specialty psychiatric or SU treatment [49]. Minority youth and their families often report access barriers, and a review of behavioral health services found that Black and Latino adolescents reported receiving less care than whites for SU problems [50, 51]. Treatments work for adolescents independent of ethnicity or race, however, suggesting that access to care should be expanded for minority youth [50]. Integrating treatment into less stigmatized settings may thus increase access for underserved populations.

In this paper we examine the literature on integration of SU treatment with other adolescent health care focusing on 2 key areas: Screening, Brief Intervention and Referral to Treatment (SBIRT) in pediatric medical settings, and school- and college-based health centers. These models of care are informed by the patient-centered medical home model, which emerged from pediatrics as a model for coordinating the care of complex patients, and has since been adopted more widely in health care. It remains especially relevant for adolescents. While some aspects of confidential adolescent behavioral health (eg, sexual health) have been addressed in schools and medical settings, the treatment of sensitive mental health and SU issues is still far from adequate. Better training for providers, and the placement of specialty care staff in non-traditional settings, may improve this.

SBIRT and Adolescents

SBIRT offers promising mechanisms for integrating treatment for adolescent SU problems into healthcare, and has been widely endorsed by the NIH and SAMHSA and most major medical organizations. SBIRT is an appealing practice in these settings because it is brief, can be used as a stand-alone treatment or combined with other treatment approaches, and is effective in diverse patient populations [52] across a wide range of behavioral domains [53]. It typically involves motivational interviewing or enhancement techniques, uses a patient-centered, non-confrontational approach to discuss sensitive behavioral problems, and may be especially appropriate for the developmental stage of adolescence [54–56].

Although SBIRT for adolescents is less well-studied than among adults, a growing number of studies demonstrate its efficacy, effectiveness, and feasibility on a range of SU outcomes, including reducing use, driving after drinking, smoking, and emergency department (ED) utilization [57–60]. Brief interventions are effective in reducing risk, drinking rates, and harmful behaviors among college-aged youth [61–64].

Emergency Department

Several studies found that brief interventions delivered to adolescents in ED settings produced better outcomes. A brief ED intervention administered to adolescents (n=152) following an alcohol-related incident reduced both drinking days and binge drinking days [65]; similar results were found in an another study of an ED brief intervention [55]. In another study examining 12-month outcomes, adolescents (n=127) who received a brief ED intervention had fewer subsequent substance-related ED visits, and attended more SU treatment [66]. In a randomized trial conducted in a pediatric ED, a brief intervention delivered to adolescents (n=210) for marijuana reduced use and resulted in higher abstinence rates [67]. Another randomized trial of a brief intervention delivered in the ED to adolescents (n=726) found reduced alcohol-related consequences and aggressive behavior [68•] among those who received a therapist-delivered brief intervention compared with controls who received a brochure.

Primary Care

Researchers have begun adapting brief interventions to pediatric primary care settings. A observational study of the impact of physician training on risk behavior screening and counseling found reduced risky drinking among the 14- and 15-year old patients of those doctors who had been trained, compared with the patients of the doctors who were not trained [69]. A Brazilian study of a primary care physician-delivered brief intervention for adolescents (n=99) found reduced use of marijuana, alcohol, inhalants, ecstasy, and tobacco, compared with a control group [70]. Knight and colleagues found reductions in drug use and risk of driving while impaired at 3 months from a pediatric observational pilot study, with the intervention delivered by both pediatricians and non-physicians. However the sample

size was small (n=33), attrition was significant, there was not a control group, and they did not examine differences in effectiveness between providers [58]. In a randomized trial, D'Amico et al. examined the impact of a brief intervention for high-risk adolescents (n=42) in a primary care clinic and found decreased SU and increased self-efficacy at 3 months compared with those receiving usual care [71•]. This study also had a small sample size and low retention rates.

Pediatricians' low rates of screening, identification, and treatment of adolescent SU are a barrier to the integration of SU treatment into health care. Relatively few of those who screen do so according to guidelines or use evidence-based screening tools [72, 73], and after screening, problem identification and intervention, or referral to specialty care are not guaranteed [74]. Even when given screening results that indicate problematic alcohol and drug use, providers can fail to accurately recognize SU problems. In a study of pediatricians' perceptions of patients' AOD problem severity, and the physicians' follow-up recommendations, Hassan et al. found that, while 14 % of the patients scored ≥2 on the CRAFFT screener, indicating a likely AOD problem, physicians' diagnostic impressions led them to identify only 4.8 % of the patients (n=2034) with problem use. Moreover, almost 20 % of patient perceived by the physicians to have an AOD problem still did not receive a recommendation for an active intervention [75•].

Several studies have examined screening and brief interventions in other settings, such as schools and other community institutions [57, 76, 77]. In a randomized trial of brief interventions delivered to homeless adolescents (n=285), Peterson and colleagues found that counselor-delivered interventions produced reductions in use of drugs other than marijuana compared with controls without the intervention [78].

In a cluster randomized trial of brief motivational interviewing delivered by non-physicians in community college settings (n=200), McCambridge and Strang found reduced alcohol, marijuana, and tobacco use among 16- to 20-year olds receiving the intervention, compared with those receiving assessment only [79]. In a trial comparing adolescents (n=79) with SU problems assigned to receive 1 of 2 therapist-delivered brief interventions vs a control condition, the adolescents receiving an intervention had better 6-month outcomes: fewer days of alcohol use, binge drinking, and illicit drug use, and fewer negative consequences [80]. In another randomized trial of brief intervention delivered to adolescents (n=315) in a school context, Winters and colleagues found that adolescents who received intervention sessions showed significantly more reductions in SU behaviors than control groups, but those in sessions with parents did better than those in sessions without 1 % of days abstinence from alcohol or cannabis [81••].

While educational settings in particular serve a large population of students with mild-to-moderate SU, and school personnel are easily trained to conduct brief interventions [77], school settings can also pose practical, systemic, and clinical barriers, including a lack of resources and the potential stigma of having a problematic student population [81••].

School-Based Health Centers

School- and college-based health centers can address the complex behavioral health needs of adolescents in an accessible setting. Offering population-based health services is one approach to addressing behavioral health issues while surmounting some of the barriers faced in traditional medical settings such as confidentiality, funding, culture, and stigma. School based health centers (SBHCs) are uniquely positioned to integrate public health interventions and environmental change strategies, and their proximity to the patient population enables effective follow-up and case management, creating multiple opportunities to provide brief interventions and preventive care [82•]. A review of SBHC

interventions found several advantages over clinic-based interventions, including better access. The authors outline the key components of effective school-based interventions: having a strong conceptual basis for describing, predicting, and interpreting normative and non-normative development patterns; conducting rigorous evaluations on an ongoing basis; combining psychoeducation and skill-building; optimizing the timing, duration, frequency, and intensity of interventions; maintaining fidelity to the implementation of key program components through manualization and ongoing monitoring; adequate training for staff and their involvement in all aspects of program development; engaging program material design; gaining support of key stakeholders by emphasizing the system-wide impact of behavioral health issues and benefits of interventions; development of clear school-wide policies for managing problematic behavior; and development of linkages with other intervention programs in a variety of implementation settings [83].

SBHCs can help address the unique needs of adolescents, including enhancing access to behavioral health services [84]. A study of 451 high school students over 4 years found that 66 % of visits to SBHCs were for medical reasons and 34 % were for mental health services, compared with 97 % of visits for medical reasons in community health centers. Visits were 21 times more likely to be initiated for behavioral health reasons at SBHCs than at community facilities and urgent and ED use was 4 times more likely for adolescents never using a SBHC. These centers also seem to improve access to behavioral health services for hard-to-reach adolescents; behavioral health services were available at all sites, suggesting that SBHCs were more accessible and responsive to adolescents' needs [85]. The location of SBHCs makes them well-suited to offer primary care, including both preventive and chronic care services [86••].

A study of 6 school districts found that those with SBHCs increased the number of students accessing behavioral health services 5.6 % and 5.9 % over 3 years, compared with increases of 2.6 % and 0.2 % in districts without SBHCs. Students receiving behavioral health care in SBHCs had significantly lower total health and behavioral health costs than students without SBHC care. Improvements in health-related quality of life among students receiving SBHC services were also observed [87]. A study of 3818 adolescent students using SBHC services found better health and higher medical visit rates than students using traditional services. The percentage of students using SBHCs for mental health and SU services was comparable to the estimated prevalence of those issues in the adolescent population. This suggests SBHCs provide greater access to care for adolescents than other settings. Also, the mean number of mental health visits to SBHCs compared favorably to visit rates by adolescents receiving services in other settings [88]. SBHCs serve students with serious medical and psychological needs: a survey of 2 SBHCs found that among participating students, rates of cigarette use ranged from 14 % to 38 %, marijuana use from 13 % to 24 %, and alcohol use from 38 % to 53 %. SBHCs provide comprehensive yet flexible care with a team-oriented approach [89].

Other studies support the practicality and effectiveness of SBHCs. A randomized trial of a brief intervention targeted at multiple behaviors delivered in 2 public high schools found a significant decrease in alcohol use [90]. An evaluation of an early intervention found it feasible for school nurses to assess and conduct brief interventions for substance-using adolescents [91]. A family-based intervention in a middle school reduced health risk behaviors and slowed the growth of alcohol, tobacco, and marijuana use compared with a control group [92].

Integration of SU treatment into college health centers is similarly effective. College students (n=08753) presenting at a student health center who were screened for high-risk alcohol use and received brief interventions showed significant reductions in several

outcomes including typical blood alcohol concentration, number of drinks per week, and binge drinking compared with those receiving usual care [93]. A brief intervention study of 155 college students comparing a multiple behavior health contract, an individually tailored consultation, and a combination of contract and consultation found improvements in behaviors related to drinking and driving, exercise, nutrition, sleep, and health quality of life, suggesting that all 3 methods may improve behavioral health outcomes [94]. In a randomized controlled trial using a web-based alcohol screening and brief intervention for 2435 Australian college students, participants who received the intervention drank less often, drank less per sitting, and consumed less alcohol overall than controls. Intervention effects for drinking frequency and overall consumption persisted at 6-months [95]. A randomized controlled trial of 986 college students screening positive for heavy drinking in 5 college health clinics found that those receiving brief advice from their physician reduced their 28-day drinking totals by 27.2 % compared with a 21 % reduction among the controls [96•].

Conclusion

Many factors impede the integration of SU treatment for adolescents into medical and psychiatric settings. In addition to the organizational fragmentation and distinct financing mechanisms, issues of stigma and patient confidentiality also inhibit integration. Although designed to safeguard patient privacy and encourage access, strict laws and regulations governing the disclosure of SU treatment information, even to other medical providers, can restrict the free flow of information necessary to implement integrated treatment approaches. Laws and policies designed to ensure fully confidential adolescent healthcare services may inadvertently obstruct integration; physicians may refrain from screening for SU problems if they are restricted from engaging parents in the treatment process without their patients' permission.

Many adolescents with SU involvement have few medical consequences (compared with many adults with similar substance involvement), which makes it more difficult for adolescents and their families to understand that the adolescent has a problem and is not just “going through a phase,” thus delaying treatment.

In spite of these barriers, the approaches discussed above represent promising strategies for addressing SU problems among adolescents. Attending to SU problems while delivering other healthcare services is a first step toward achieving integration, whether in medical or other non-traditional settings such as SBHCs. Early identification of SU problems is consistent with the preventive orientation of pediatric medicine and the recognition that for most adolescents, behavioral factors pose the greatest risks to their health. Moreover, the growing appreciation that SU disorders are often pediatric-onset and frequently co-occur with other behavioral, psychiatric, and medical conditions, is leading most major medical organizations to conclude that especially for adolescents, comprehensive, “broad-brush” screening is preferable to single-problem screening. In particular, adolescents who exhibit symptoms of psychiatric distress require special attention; as noted above, psychiatric and SU problems are frequently comorbid, and mood and anxiety symptoms should be immediate “red flags” for SU assessment. A pilot study of SBIRT for adolescents (n=77) in pediatrics found that while most problems initially identified by pediatricians were related to mood symptoms or stress, upon further assessment, 77 % of the teens endorsed alcohol or drug use or both. (These data were presented at the International Network for Brief Interventions for Alcohol and Other Drugs, Annual Meeting, 2011: “SBIRT for youth alcohol and drug use in primary care: Predictors and implications for practice and policy”).

Many young patients with SU, especially girls, will seek treatment in psychiatric setting, before or instead of specialty SU treatment [97]. SU assessment and treatment in those settings is thus also critical to integration. The “no wrong door” approach to identification of substance SU problems in adolescents with co-occurring conditions facilitates treatment initiation and engagement [98]. Paradoxically, stigma, which can otherwise hinder utilization of specialty SU treatment, might encourage utilization of treatment in non-traditional nonspeciality settings such as primary care or psychiatry.

Based on the literature, this paper recommends approaching the issue from 2 directions: first, bringing SBIRT into pediatric medical settings in order to train pediatricians and primary care teams to identify, assess, and treat SU and other behavioral problems, and refer to specialty treatment when appropriate; second, integrating substance use counseling and brief interventions into school and college settings, where other medical and behavioral health care is already being provided. Combing these approaches maximizes accessibility to SU treatment for adolescents, and helps them before their problems become severe.

As discussed above, evidence is growing on the effectiveness and feasibility of SBIRT and similar models of brief SU treatment in pediatric medical care and, clearly, earlier identification and intervention can prevent or ameliorate development of more severe SU disorders. The SBHC literature suggests that they too offer an effective way to integrate SU and other types of behavioral health care into an adolescent medical care setting. This is an opportune time for adoption, as both models are consistent with the patient-centered medical home model now recommended in health care delivery [99], and with health care reform regulations that emphasize integration and coordination of care [100]. It is incumbent upon leaders in pediatrics, psychiatry, and substance abuse treatment to embrace and champion models of integration, as the health care system undergoes profound change in the coming years.

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