

A Review of Treatments of Substance Use Disorder for Transitional Age Adults

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Abstract

Mental health concerns often develop during the “transitional age” (between 18-24 years old), a time during which young adults often begin to experience the stressors and responsibilities of emerging adulthood. Yet, treatment complications and limitations that uniquely affect this age group have frequently been unaddressed, both in academia and in practice. Substance Use Disorder (SUD) is one of the most common, costly, and intractable mental health concerns that affect this demographic. Here, we perform a literature review of 35 publications and find that traditional methods of treatments such as medications, family therapies, and Cognitive Behavioral Therapy (CBT) are not only underutilized, but also poorly applied within the transitional age demographic. Emerging treatment research suggests that devising treatment plans for transitional age youth using modified traditional practices and new evidence-based practices should improve the outcomes of SUD treatments. To improve treatment efficacy and adherence, we suggest promising areas of research surrounding therapeutic alliances, community engagement, continuity, Motivational Enhancement Therapy, and Multisystemic Therapy.

Introduction

Prevalence and severity of mental health concerns amongst adult and adolescent populations are well-established in research and practice. The distinctions between the two age groups has increasingly become a focus of mental health research, while mental health concerns are often overlooked in the gap period known as the “transitional age.” Here, we define the transitional age individuals to be those between 18-24 years of age, based on an analysis of when most mental health concerns first manifest and the consideration by the Centers for Disease Control and Prevention (CDC) and National Institute of Mental Health (NIMH) of an individual as a child or adolescent.¹ The CDC considers an individual to be an adolescent until they reach age 18.² The vast majority of mental health concerns develop between ages 15-24.^{1,3} Given these ranges, the intersection between childhood and mental illness’ nascent stages creates clear boundaries between adolescents, transitional age individuals, and fully grown adults. While research into adolescent mental health concerns is highly specific, transitional age individuals often lack a clear identity in the research lens and are grouped with one of the other two categories.

Longitudinal demographic studies from 1990 to 2010 have indicated that approximately one in five adolescent and transitional age individuals will experience mental illness.² Overall, these studies indicate

that the mental health burden has been increasing in developed countries, specifically upon these younger individuals. These individuals are at elevated risk for concerns such as depression, anxiety, substance abuse, ADHD, eating disorders, PTSD, etc. Often, the concerns increase in complexity as they have a high rate of comorbidity.⁴

One characteristic that influences the behavior of transitional age adults is an unstructured development period of individuation with fewer rules, which may lead to increased opportunity for substance use.⁴ Transitional age individuals also have fully developed limbic systems in the brain (which function for motivation and reward) accompanied by less developed prefrontal cortices (aiding in planning and inhibition), biologically predisposing them to take more risks with immediate reward without considering later consequences.⁵ They are also less likely to adhere to treatment plans and to view their recovery as possible and essential since they lack (a) the level of executive functioning capacity that a fully developed prefrontal cortex will later provide, (b) the motivation of retaining a marriage or a full-time career, or (c) the extrinsic motivation of parentally-imposed rules. This is highlighted by the highly stressful environments of college, the entry to adult life, and possible failure to live up to social expectations.⁴ Furthermore, transitional age individuals are generally not vocationally established, leading to a degree of continued dependence

on the systems of authority in place when they were minors. This makes treatment more complex, since it involves a greater circle of effected and influential individuals, but also opens new avenues of treatment through social systems.⁶ Finally, many individuals with substance use disorders (SUDs) use substances as coping mechanisms for general life stressors and therefore never develop other social and behavioral means of coping, which predisposes them to comorbid mental health disorders.⁷

There is a decline in utilization of mental health services as youth transition into young adulthood. For 16 and 17-year-olds, the yearly admission rate for inpatient, outpatient, and residential services in 2008 was 34 per 1000, while the number decreased dramatically to just 18 per 1000 for ages 18 and 19. Notably, among 20- and 21-year-olds who utilize mental health services, more were referred from the criminal justice system than from family or friends.⁸ This shows that there need to be more resources and support allocated to ensure that young adult clients can remain in treatment as they age out of child mental health systems.

Furthermore, there is a median delay of 11 years between the onset of a mental health concern and accessing services to correct it.³ Eisenberg et al. assert that most mental health disorders have their onset between ages 15-24, with transitional age individuals being uniquely vulnerable and important for targeted treatments. They

found that among college-attending students only approximately 36% of individuals who screened positive for depression or anxiety had accessed aid. This clearly indicates a gap that is wider among youth without access to the support structures postsecondary education provides.

Transitional age individuals, who experience a period of increased autonomy and decreased regulation, are the demographic in which substance misuse is uniquely prevalent. Yet, traditional treatments such as cognitive behavioral therapy, support groups, and contemporary medication prescription have been found to be often the least effective for these individuals.⁹ Thus, it is important to more completely investigate literature to identify gaps in current methods of treating substance misuse in transitional age adults. In this review, we investigate the shortcomings of current treatments for transitional age adults and identify promising new areas of research as a way forward.

Methods

Research papers on substance use disorders in transitional age adults were identified from an electronic database by using search terms to specify relevant articles. Using PubMed and Google Scholar (January 2000 to April 2017), combinations of the search terms transitional age, adolescent, substance use disorder, substance abuse, adolescent, and mental health were necessitated. For the purpose of this review, "transitional age" individuals are individuals between 18 and 24 years of age. Research papers focused on primarily non-transitional age individuals (i.e. individuals outside the age range of 18-24) were excluded. Of the remaining accessible articles, case studies and articles where mental health, non-transitional age individuals, or substance use were not central were excluded. Articles used in this review only had human subjects and were written in English.

Results

Traditional Methods

Because of the high risks of substance misuse and its corresponding impacts in young adults, improved SUD treatment for this age group is important. SUDs are not only most prevalent in the transitional age group, but also many treatments that are effective for adults and adolescents have been found to have severe shortcomings in treating this specific population.¹⁰

There are two prevalent pharmacological methods for the treatment of SUDs. As of 2009, most drugs to treat addiction are opioid agonists that eliminate withdrawal symptoms; the most commonly used drugs of this class are methadone and buprenorphine.¹¹ Post-treatment fidelity (continued sobriety) is the primary concern

of the effectiveness of pharmacological treatments. Naloxone, usually a drug prescribed to mitigate the effects of an overdose, can be used to overcome some of these problems, maintaining fidelity to treatment and preventing relapse.¹² However, Naloxone functions by inhibition of pattern completion responses which are crucial to learning, which indicates that it is not necessarily a good complement to a methadone regimen for transitional age individuals.¹² In other words, Naloxone is not the best pharmacologic treatment for transitional age individuals; instead, physical withdrawal symptoms should be managed by methadone or buprenorphine as other routes of mental health treatment are pursued.

Many behavioral therapies exist independent of pharmacological approaches. Some evidence-based treatments include contingency management therapies, cognitive-behavior/skills-training therapies, motivational interviewing, and family treatments.⁹ Contingency management therapies motivate patients to perform desired actions, such as passing a drug test, by providing systemic rewards. Such a method has shown promise, but it ideally requires more outreach to policymakers and the general legal framework. Skills-training therapies have strong empirical backing in other mental health treatments, such as depression or anxiety, but there has been less study as to their limitations. Motivational interviewing, which entails guided conversation meant to increase intrinsic motivation and aid application of said motivation, has been shown to generally increase fidelity to treatments as it creates an overall more positive attitude towards treatment, thus staving off relapse, but has not been shown to be as effective on its own. Family treatments have shown greater efficacy on their own, but their main impact has also been shown to lie in fidelity, with the added effect of improving the mental health state of peripheral individuals impacted by the disorder.

Other studies have investigated the availability and use of mental health services for concurrent disorders amongst transitional age individuals.¹³ It was shown that 65% of the participants in their study with substance use disorders have at least one lifetime mental disorder. One such example where treatment of a concurrent mental health disorder affected SUD risk can be found in the complex relationship between medication for Attention Deficit Hyperactivity Disorder (ADHD) and the risk of substance misuse. Wilens et al. (2013) found in a meta-analysis of six studies that while pharmacological treatment decreased the risk in children with ADHD for later substance use disorder, this

protective effect decreased significantly as individuals transitioned from adolescence into adulthood.¹⁴ Mean onset of SUD in ADHD individuals occurs at 19 years old, which underlies the importance of factors surrounding transitional age (changing involvement of family, doctor, pharmacological, and other environmental supports) when considering complicating factors regarding SUD.

Despite being part of an age group with the highest level of need for mental health services, young adults are the least likely individuals to use mental health services. This demonstrates a need for integrated treatment models that address the intersection of substance use and mental illness. Overall, the rate of mental health treatment for transitional age individuals is low - only 15% of 18-25-year-olds receive treatment for depression, vs 38% of adolescents.¹⁵ Few studies of transitional age individuals have examined differing effects of mental health treatment between transitional age socioeconomic and ethnic subgroups. Although young adults have an overall higher prevalence of and lower treatment of alcohol and serious psychological distress, males (as opposed to females) and non-Whites (as opposed to Caucasians) both proportionally receive less treatment, even after accounting for economic and insurance disparities. This suggests that stigma and personal/cultural factors play a large role, potentially having negative effects on treatment fidelity. Surprisingly, income plays little role in the rate of treatment, perhaps because these individuals still have access to their parents' resources.

Race influences current treatment availability and fidelity. Employing a targeting strategy driven by race may be beneficial.¹⁶ Cost and stigma were the most significant barriers to receiving mental health care, and transitional age individuals are particularly susceptible to believing and being negatively affected by negative stigmas surrounding mental health. For example, an individual whose cultural background and home environment both stigmatize mental health disorders and/or addiction is less likely to seek treatment. Additionally, the study suggests that there exists a significant correlation between people who perceive that they need mental health treatment services but fail to receive them and people with substance use disorder (SUD). We believe that further studies are necessary to validate this claim.

Education also affects incidence and treatment. Education attainment and school enrollment are protective factors as substance misuse is less compatible with college student lifestyles.¹⁷ Treatment fidelity was higher

for college students. These students were more likely to complete substance misuse treatment than non-students and completed it in a faster timeframe. Students were most likely to misuse alcohol and marijuana as they can remain relatively high functioning under these substances, while non-students delved into other drugs.

It is unclear what effect regional differences have on substance misuse treatment. In literature prior to 2008, many studies showed that substance misuse was less common in rural areas in the US.^{18,19} However, a study from 2015 suggests that substance misuse is higher in rural areas, especially with alcohol and methamphetamine.¹⁹ In order to help youth in rural areas, intervention programs taking into consideration the rural context and the existing rural infrastructure need to be developed.

After the initial administration of treatment, close monitoring of potential for relapse is important. Two-thirds of the participants in the study had relapsed to drug use within six months.²⁰ While rates of relapse following treatment are comparably high in both adults and adolescents, the reasons for relapse differ significantly. Adults relapsed in social situations in which they experienced urges and temptations to drink/use or when they were trying to cope with a negative emotion and urges and temptations to drink/use. In contrast, nearly 70% of adolescent subjects reported that they relapsed in social situations when they were trying to enhance a positive emotional state.²¹ Given that young adults are often in environments where substance misuse is not only tolerated but even glorified, there need to be programs that rigorously follow up with young people recovering from substance misuse.

Finally, there are various public strategies that synthesize psychological and pharmacological approaches and are currently employed by substance misuse treatment services to help adolescents and their families: pairing families with professionals, organizing programs to gather families together, and enlisting policy makers to help make decisions for families through having access to experts.²² In other words, the first technique is an approach to help one particular family while the second groups families together to create a self-supporting community. The latter technique can have long-term effects in multiple families, which was the case in states such as Wisconsin where the Child and Youth Substance Abuse Subcommittee was installed to aid families in getting the right substance misuse treatment the victim needs. However, even with these different techniques being employed through more than nine states, the issues of substance misuse and recovery persist.

Modifications

Engagement between counselors and patients should be increased where feasible. Therapeutic alliances between counselors and young adult patients play an important role in dealing with substance misuse.²³ A therapeutic alliance exists when “the therapy dyad is engaged in collaborative, purposeful work”.²⁴ A therapeutic alliance emphasizes the participation of both counselors and their patients in creating goals and therapy tasks, fostering an emotional bond between patients and their therapists. The strength of the counselor patient alliance correlated significantly with positive treatment outcomes in patients. Patients who began treatment with higher levels of motivation and self-efficacy to abstain from substances showed stronger therapeutic alliances. Problems of mandated and resistant clients will still exist in many cases; however, a starting point of dyadic therapy (i.e. using the patient’s goals to guide a treatment plan) will likely improve care.

Likewise, active participation of transitional age patients in making decisions on what medications to take leads to reduced symptoms, higher self-esteem, and improved fidelity.²⁵ Conversely, top-down prescriptions result in the overuse of psychotropic drugs, which have unique and negative side effects during the transitional age. The support of advocates such as mental health providers during meetings with psychiatrists can improve deliberation, as can psychiatrists who are available outside of office time to provide quick answers to concerns about dosage and about side effects.

Community engagement and external focus are beneficial in avoiding and alleviating substance use and other forms of mental illness.²⁶ Interestingly, Hispanic teens who feel more responsible for others (such as their family) are less likely to binge drink and smoke marijuana than teens who see emerging adulthood as a time for self-exploration or who feel less of an obligation to others.²⁶ Mentally ill teens also expressed much greater life satisfaction if they were engaged in work which they thought might benefit others and if they felt that they had meaningful social connections. This sense of belonging and usefulness is essential for mental health and healthy behaviors and can improve treatment effectiveness, though its effects may vary widely between different ethnic and social groups.^{27,28}

Continuity of treatment from adolescence into adulthood is important. More longitudinal, controlled health services research must be conducted to find optimal service models of treatment for those in the transitional age period.²⁹ More specifically, there needs to be systematic and seamless

transition protocols for patients with mental disorders who need to continue care into adult mental service. Currently, there is no consensus on what constitutes as a successful transition. Moreover, there is a decline in the use of mental health services by transitional age youth as they transition from adolescence to adulthood, even in the case of continuing disorders.

Varying the location of treatment alters its effectiveness, particularly for young adults receiving substance use treatment who also have co-occurring psychiatric disorders.⁹ People with co-occurring disorders (COD) were seen to put strain on coping resources, which resulted in poorer treatment response and outcomes. COD patients reported higher level of dependence severity and substance use consequences. For treatment, they reported that treatment delivered in familiar, residential settings could most benefit COD patients, as it alleviates some psychological stress by reducing environmental demand and providing a consistent emotional support system. Dedication to substance abstinence resulted in greater availability of cognitive resources and interventions were maximized by addressing motivation, self-efficacy and coping skills. The study was consistent with other articles showing that young adults are very susceptible to co-occurring disorders, and that patients with COD need specialized treatment for their health.

Increasing focus on Motivational Enhancement Therapy (MET) could be potentially effective for this age group. MET is a technique that relies on inducing rapid and internally motivated change, often causing individuals to overcome their opposition to engaging in treatments for substance misuse.³⁰ Tobacco addiction almost always begins between the ages of 18 and 24 and complicates mental health treatment by increasing the metabolism of antipsychotic and antidepressant medications. Of psychiatric patients, 50% with anxiety and 66% with depression smoke. Parents are a factor which enables smoking, both by purchasing cigarettes, providing a role model who smokes, and not discouraging tobacco use, especially within certain cultural groups. Additionally, although mental health providers and youth agree that smoking is a way for subjects to engage with their peers, it is also an addictive and unhealthy behavior, and providers and youths often propose different solutions to addiction. Youth often prefer to quit “cold turkey” and avoid pharmacologic treatments, whereas providers either view smoking as an inevitable “fact of life” or prioritize the use of cessation medication like nicotine patches. However, “motivational strategies” were recommended by both youth and providers, potentially

an avenue for compromise. Mental health facilities are also viewed by both providers and youth as a safe space to talk about these problems and are another potential way to address addiction.³¹

Similarly, there is often an escalation of drinking and alcohol use problems in the transitional age group.³² Despite high rates of alcohol usage, only a small proportion of people seek and receive treatment. Furthermore, canonical interventions fail for older adolescents. Late adolescence is a period of high vulnerability as there are vast “neurologic, cognitive, and social changes” that occur. Hence, treatment should capitalize on “transient high motivational states of youths” who, at a younger age, have fewer drug use problems that might arise from alcohol and are more likely to want to change their drinking habits. “Motivational enhancement techniques” (such as MET) should be considered as an early treatment.

Integrating multiple therapies is a potentially effective technique. For example, Hersh et al (2013) investigated a combination of Cognitive Behavioral Therapy (CBT) and MET.³³ Few studies have investigated how depression and conduct disorder affect efficacy of substance misuse treatment in transitional age individuals – prior research focused on depression and conduct disorders individually, instead of treating them as an integrated, unique problem. Cognitive behavioral therapy that addresses youths’ hostile attribution bias and builds social support combined with motivational enhancement therapy to increase goal setting proved effective, even with only four sessions over a year. However, this study lacked a control group and focused mostly on Caucasians. Interestingly, contrary to previous studies, stronger depression makes substance misuse treatment more effective, implying both that more research needs to be done on the way mental health disorders can affect substance misuse treatment and that one must consider the length of treatment and follow up when comparing different studies. Higher income is also correlated with better treatment outcomes, possibly because wealthier youths have more opportunities to remove themselves from negative peer associations.

Multisystemic Therapy (MST), a specific family-involved therapy, has some significant benefits down the line, but is not universally helpful on its own.³⁴ Firstly, it indicates that there is a disaggregation of antisocial tendencies where the problems associated with the drug misuse, namely crime, are transitioned from an “overt” setting to a “covert” setting. That is to say, the patients who go through MST are less likely to commit aggressive crime, but no less

likely to commit property crimes. This, along with a lack of significant results in terms of improving psychiatric well-being, indicates that MST is likely to be only useful as a complement as long as the underlying issues are treated.

To further accentuate this nuanced point of view, though, the efficacy of MST is also sensitive to cultural needs and is suitable for a diverse range of ethnic groups.³⁵ This complements the fact that in the previous study 60% of the patients were African American. The only major racial factor that had an impact was that race matching between therapist and patient was beneficial. Rowe et al’s work validated the persistent efficacy of MST for up to 14 years.³⁵

This is because, most importantly, MST’s effects are persistent over many years. Thus, combining MST with other treatment forms can ensure fidelity to treatment and preventing relapses.¹² The patients in the Henggeler study had low treatment fidelity to the MST, but that could be explained by the lack of treatment for the underlying factors.³⁵ Thus, MST is undeniably beneficial, but only truly makes an impact in the context of a larger treatment plan.

Discussion and Conclusions

In this paper, we report that the transitional age demographic is socially and physiologically distinct from both adolescents and adults. Usually, when a large age demographic with a disorder exists, an outline for treatment rapidly emerges, as it did for adults and adolescents with mental health disorders. Despite the large size of the transitional age demographic and the propensity of mental health and substance misuse disorders to arise during this time, there is still no unified framework to treat transitional age individuals. Treatments for co-occurring substance misuse and mental health disorders need to account for their uniqueness.

To prevent disorders, therapists should screen clients for different SUDs since young adults don’t always recognize the importance of treating their disorders early.³² In treatment, therapists should adopt a fluid, patient-centered approach, use developmentally tailored communication and engagement, involve and train parents if possible, and help patients to develop a non-using support network. Finally, therapists should emphasize treatment engagement rather than full adherence, as young adults often relapse at first and cannot immediately reach recovery. Successful recovery in transitional age individuals should not be defined as immediate, uninterrupted sobriety, but instead as a continued dedication to treatment and desire to become sober, healthy, and productive. This provides

a strong metric by which we can evaluate current and potential treatment avenues.

Traditional methods such as pharmacological regimes and late-stage contingency management are relatively ineffective in terms of treatment fidelity. Family treatments, motivational interviewing, and CBT are underutilized and do not account for relapse. As a result, current treatment overall is underutilized and results in racial and socioeconomic discrepancies.

Instead, treatments should be modified to focus more on creating therapeutic alliances, engaging patients with the community and youth, continuing treatment from youth to adulthood, deciding the most appropriate physical location of treatment, increasing focus on MET and CBT (perhaps as an integrated therapy), and using multisystemic therapy to supplement other treatments.

Overall, we found a lack of research on treatment specific to the period of transition from youth to adulthood. Where research was present, it was often solely correlational, and the sample size rarely exceeded a few dozen people. Even though the intent of the research was to improve treatment and clinical outcomes, it often lacked essential features to verify its efficacy, such as clinical trials with a control group. Finally, the methods that were proposed are not implemented widely by psychiatrists today. More clinical research is needed on the transitional age demographic to understand why certain treatments are ineffective and which modifications should be made.

An essential limitation of our review paper is that in our discussion of transitional age individuals, we lack substantial overview of the effects of childhood and adolescence on the lives, habits, and personalities of those in the transitional age. As a result, we cannot adequately capture the potential importance of mitigating risk factors for SUD that present themselves in childhood and adolescence. If we take this logic to its conclusion, substantive treatment for transitional age individuals is potentially of a lower priority as deeper knowledge and preventative treatment rooted in childhood and adolescence could prevent both SUD and associated concerns.

However, this logic is predicated upon further research in transitional ages that is not currently showcased in literature. This reinforces the importance of our thesis calling for further research. Further research, which our paper could not capture, could encapsulate dichotomies between university-attending individuals, vocational individuals, or unemployed individuals. It could also include longitudinal studies and treatment pipelines which have yet to be

publicized (clinical/lab phases) and were thus not expressed in this paper. To address this concern, we searched the intellectual property database Innography twice, once for “substance use mental health” and once for “substance use disorders addiction treatment” (Figure 1). Both showed similar trends in both patents filed and grants given; the latter showed significantly greater amounts of data and is displayed below. The number of grants offered spiked in 2012 and has steadily declined since. Overall, filings follow grants with a one- to two-year delay, and the four-year decline since 2012 in both grants and patents indicates that the field is “drying up” and needs revitalization. This positions research into transitional age individuals as a uniquely important avenue of research. Findings in this specific avenue of research could stimulate the idle academic status quo. Given the established lack of substantial information, which led to the limitations we highlighted in our review, a stimulus could lead to new developments in addiction and mental health treatment beyond the narrow scope of transitional age individuals and shed new light on our understanding of comprehensive prevention and treatment methodologies.

Further, our analysis of the primary studies in that the range of age group identified as transitional youth varied between studies. The conclusions we have drawn above stem from a small available selection of studies. There is a need for more research on transitional age individuals and their relationship with substance use in general, and we hope that currently ongoing longitudinal studies can shed new light on

this critical issue.

While it is the outside the scope of our paper, it may be important as well to consider experiences and treatments provided during childhood and adolescence for these transitional age individuals, as problems during transitional age may more commonly stem from previous experiences. This, if found to be true, would suggest that efforts focused on preventative care during earlier years would be better served than those focused on treatments targeting transitional age individuals.

Even after this review of multiple studies on substance misuse of individuals who are in the transitional age group, there are still many questions left unanswered. A major issue includes the multitude of factors that may take role in an adolescent’s decision. Transitional age has proven to be a particular age group that can be found to be committing detrimental behaviors such as substance misuse. However, the elements in the adolescent’s environment that can elicit such behaviors are yet to be determined, whether these elements depend on ethnic culture, gender, geography, or race just to name a few. Additionally, part of the difficulty individuals of transitional age encounter in coping with issues such as substance misuse include their lack of utilization of existing mental health services. What specifically yields these decisions have not been thoroughly documented yet. Finally, while there are many similarities in the social and molecular mechanisms contributing to substance misuse, important differences in the research, treatment, and legal environments exist depending on the substance being misused

(e.g. alcohol vs marijuana). While this review primarily focuses on unifying factors that impact both alcohol and marijuana use disorders in transitional age adults, research and treatment must also take into account the particular substance being abused.

Thus, we recommend future research should be conducted with longitudinal studies following a large population of youth that finds correlations between factors in childhood and transitional age substance misuse disorders. A correlational study with a large sample size would greatly add to our understanding of the cause for these disorders, and a greater emphasis on prevention can be made, rather than treatment. In addition, transitional age individuals are admitted for mental health treatment at extremely lower rates; more research is needed to explain these low admission rates. More information addressing the factors of deterrence that most transitional age individuals face when considering mental health treatments can help health care workers propose more effective plans that would benefit all potential treatment options. Finally, clinical trials with the treatments listed in our results section would allow a robust evaluation of each treatment option.

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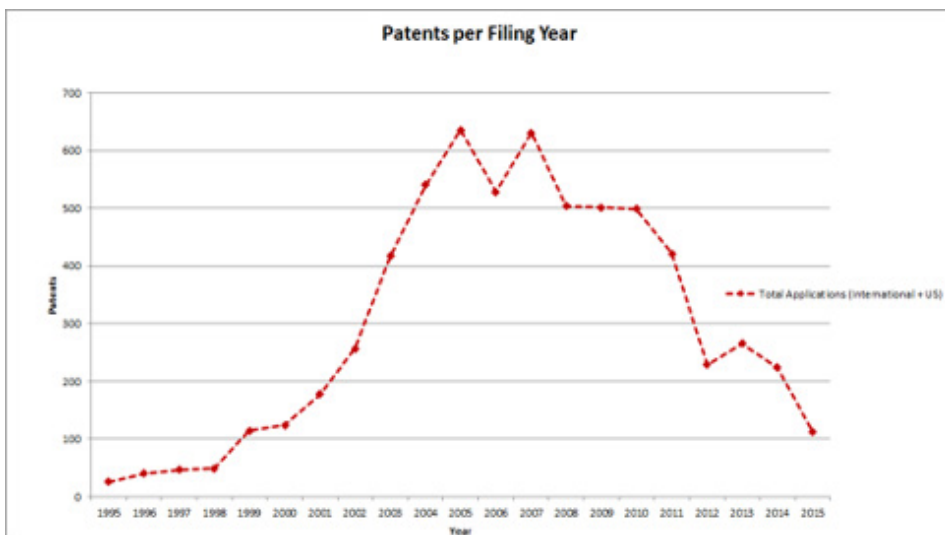


Figure 1: Substance Use Disorder Patent Applications. Global patent applications for “substance use disorders addiction treatment” from 1995 to 2015. Since 2012, there has been a steady downward trend, suggesting a need for revitalization of funding SUD research.

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