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What parents of adolescents in residential substance use treatment want from continuing care: A content analysis of online forum posts

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Abstract

Background: Parents of adolescents in residential substance use (SU) treatment face a myriad of barriers to continuing care services. Growing research suggests that mobile health (mHealth) technologies can overcome common barriers to continuing care services, yet no work has addressed parents' needs. To gain insight into parents' continuing care needs, we analyzed online forum posts made by parents who received a novel mHealth intervention.

Methods: Thirty parents received access to an online networking forum where they could connect with our adolescent SU expert or the community of parents also navigating their adolescent's post-discharge transition. In real-time, participants could ask questions and share information, experiences, and emotional support.

Results: Twenty-one parents (70%) posted at least once; 12 parents made 15 posts to our expert, while 18 parents made 50 posts to the parent community. Thematic analysis uncovered five major themes: parenting skills; parent support; managing the post-discharge transition; adolescent SU; and family functioning.

Conclusions: Parents discussed a range of topics directly and indirectly related to their adolescent's treatment. Incorporating networking forums into mHealth continuing care interventions offers parents a secure space to ask questions, share concerns, and gather information needed to support their adolescent's transition home.

Keywords

Online forum; parents; continuing care; substance use treatment; mHealth

Adolescents discharged from short-term inpatient (i.e., 6–10 days) or residential treatment (i.e., 4–6 weeks; hereafter “residential”) are at high risk of relapse, broadly defined as a return to problematic substance use (SU).¹ Data suggest that anywhere from 64% to 86%^{2–5} of adolescents will use substances within one year of discharge, reflective of the

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chronic relapsing pattern of SU disorders.^{6,7} In an effort to reduce the risk of SU relapse, providers often refer families to receive continuing care⁸ (CC) services post-discharge. Historically called “aftercare” or “step-down” care, CC services aim to maintain treatment gains following an acute treatment episode, including residential. Formal CC programs are typically delivered in an outpatient clinic and involve several months of weekly group counseling sessions focused on preventing SU relapse.^{9,10} Despite consistent evidence that CC decreases rates of adolescent SU relapse following residential treatment,^{11,12} as few as 36% of adolescents successfully link with and receive standard CC services post-discharge.^{13,14} Researchers have identified multiple logistical, individual, and family-level barriers that may impede adolescents’ linkage to CC services, including geographic distance from the home, early termination of residential treatment, treatment fatigue, and caregiver work schedules.^{14–19} Linkage rates and adolescent SU outcomes have been found to improve significantly when more intensive, assertive CC^{2,13,20} approaches are used,⁸ though their increased costs and workforce demands may impede feasibility of implementation and long-term sustainability.²¹

In their 2016 literature review of CC for adolescents in SU treatment, Passetti and colleagues⁸ argued a need for new CC service delivery approaches that are low-cost, sustainable, and easy to deliver immediately upon discharge. Mobile health (mHealth) technologies, including websites, text messaging, and mobile apps, have the capacity to side-step many of the known barriers to CC service delivery. Recent mHealth programs have shown promise among adolescents with SU,²² including two mHealth CC programs for adolescents discharged from residential care. Gonzales et al.^{23,24} supplemented CC-as-usual services with 12 weeks of recovery-related daily text messages and found youth were significantly less likely to test positive for their preferred substance at 3-, 6-, and 9-months post-discharge. Similarly, Dennis et al.²⁵ used a mHealth app to monitor relapse risk and offer real-time support to adolescents post-discharge from residential; the research team found strong evidence of feasibility of implementation and preliminary evidence of effectiveness at reducing SU relapse behaviors.

Critically, current mHealth CC programs have only engaged adolescents in CC services. This represents a striking departure from more established, non-mHealth CC approaches, which typically engage both the adolescent and their parent or caregiver (hereafter “parent”).⁸ The family context wields significant influence on child development and behavior, such that most youth-focused interventions seek to engage and treat both child and parent.^{26,27} Parenting has been established as a critical factor in both the initiation and maintenance of adolescent SU.^{28,29} Specifically, parent-adolescent communication and parental monitoring of risky behavior are two powerful mechanisms that can protect against or promote adolescent SU, depending on their relative effectiveness.^{29–32} Furthermore, meta-analytic and systematic reviews of evidence-based adolescent SU interventions have consistently found family-based models that involve parents outperform empirically supported approaches that solely engage the adolescent.^{33–35} Even from a logistical perspective, parent engagement in an adolescent’s SU treatment has repeatedly been shown to improve adolescent engagement, retention, and clinical outcomes,^{36–41} including SU relapse following the transition home from residential treatment.¹⁸

Despite such strong empirical rationale for directly engaging parents in CC services for adolescents, parents of adolescents with or at-risk of SU disorders are notoriously difficult to engage in their child's treatment.^{42–44} A recent systematic review by Reardon and colleagues⁴⁵ identified a range of perceived barriers to parent participation in their child's treatment. Multiple logistical barriers to parent engagement were described, including direct and indirect financial costs, long wait lists, travel inconveniences, and inflexible scheduling. The increased accessibility, flexibility, and on-demand nature of mHealth approaches, then, may be an especially appealing alternative to current clinic- or home-based CC programs. Preliminary evidence suggests that parents would welcome mHealth-delivered CC. One recent survey indicated that parents perceive multiple benefits of mHealth for youth, including superior accessibility, lower costs, and earlier access to care.⁴⁶ In another survey study, parents of adolescents preparing to discharge from SU treatment were more interested in receiving their adolescent's CC services via mHealth than existing in-person approaches (91% vs 72%).⁴³

Given evidence of parents' interest in and preference for mHealth approaches, particularly as a means of engaging in CC after adolescent SU treatment, an important next step is to clarify parents' specific concerns and/or support needs during the transition from residential to CC. One way to build preliminary knowledge around parents' CC needs is to analyze content posted in online forums. The internet and mHealth technologies empower parents to proactively seek healthcare information,^{47,48} both from experts and from others' personal experiences; research suggests that parents concerned about their adolescent SU prefer to seek healthcare information online.⁴⁹ Careful analysis of online forum posts has led to new insights in a range of sensitive healthcare topics among parents, including social support among mothers coping with the death of a child⁵⁰ and parenting youth with complex pain.⁵¹ This approach has also been used on networking forums for individuals struggling with SU, shedding light on the transition from recreational to problematic use and/or disorder,⁵² linguistic predictors of relapse,⁵³ and the importance of social support during recovery.^{54,55}

The present content analysis is the first to examine networking forum content from parents of adolescents in residential treatment. We capitalize on data collected during the pilot randomized trial of Parent SMART (Substance Misuse in Adolescents in Residential Treatment⁵⁶), a novel mHealth parenting intervention. Parent SMART combined multiple mHealth-based components, including access to a private networking forum that offered parents two options to engage: communications could be directed to either a SU expert or a community of other Parent SMART participants. Our objective was to explore the topics discussed in these two complimentary forums, to gain insight into parents' information and support needs during the post-discharge transition. Such information can be used to identify novel targets for future mHealth interventions to better meet the needs of parents during this vulnerable transition period.

Methods

Recruitment and participants

This qualitative analysis utilizes online forum data collected via the Parent SMART pilot trial; recruitment procedures have been described elsewhere⁵⁷ and are briefly summarized

here. All study procedures were approved by the Institutional Review Boards at Brown University and Rhode Island Hospital, an affiliate of the Alpert Medical School of Brown University. Families were recruited from two residential treatment centers for adolescents, one for short-term (i.e., 1–2 weeks) and the other long-term (i.e., 4–6 weeks) care. At the short-term site, study staff approached families to screen for study eligibility and obtain consent/assent. At the long-term site, residential staff screened families at intake and obtained consent-to-contact from those interested; study staff then contacted families to describe the trial and obtain consent/assent.

To qualify for the Parent SMART pilot trial, adolescent-parent dyads had to meet the following criteria: (1) “parent” was legal guardian of an eligible 12–17-year-old; (2) adolescent was in residential treatment for SU-related problems; (3) parent would resume guardianship of the adolescent post-discharge; (4) parent was willing to receive a mHealth CC intervention; (5) parent was fluent in English or Spanish; and (6) both provided informed consent/assent.

Of 209 dyads screened, 79 were not eligible (38%); most screened out because the adolescent was not admitted for SU-related problems ($n = 66$). All adolescents to screen out were served at the short-term site, which identified as dual diagnosis program, but accepted a substantial proportion of adolescents with mental health problems only. Of 130 eligible dyads, 64 did not enroll because either the parent could not be reached ($n = 34$), was not interested ($n = 18$), would not resume guardianship ($n = 4$), or other logistical impediments ($n = 8$; e.g., no access to a smartphone). Of 66 consented dyads, 61 completed baseline measures and were randomized to receive either Parent SMART ($n = 30$) or treatment-as-usual (TAU; $n = 31$); only parents randomized to Parent SMART were eligible for the current qualitative analysis. Urn randomization balanced conditions on adolescent biological sex, racial/ethnic minority status (i.e., Non-Hispanic White vs. Non-majority), and baseline SU (i.e., used substances 1–45 days vs. 46–90 days). Adolescents whose parents received Parent SMART were 47% female, 57% Non-Hispanic White, and averaged 16 years of age ($SD = 0.9$). On the Global Appraisal of Individual Needs-Q3,⁵⁸ a brief scale assessing problems in the 90 days before admission, youth reported 4 symptoms of internalizing distress ($SD = 4.6$) and 4 symptoms of externalizing distress ($SD = 1.3$) on average, of 6 possible symptoms; adolescent-reported SU averaged 51 days ($SD = 35.3$).

Qualitative sample

Forum data came from only the 30 Parent SMART parents, as they were the only participants with access to the private networking forum. Parent SMART parents were typically married or domestically partnered (60%), female (87%), and averaged 44 years of age ($SD = 6.5$). Parents were white (87%), Black/African American (10%), or bi-racial (3%); in addition, 27% identified as being of Latin/Hispanic ethnicity. Most reported full-time employment (63%) and annual household incomes under \$60,000 (66%), roughly the U.S. median household income during the study.⁵⁹ A minority of parents held bachelors or postgraduate degrees (40%).

Parent SMART networking: parent and expert forums

Briefly, Parent SMART⁵⁶ aimed to support skill development in three domains: parental monitoring, or how to assess an adolescent's activities and whereabouts; communication, or how to actively listen and effectively share one's perspective; and behavioral contracting, which engages families in setting and enforcing household limits. Participant skills were developed via three key elements: (1) access to Parenting Wisely,⁶⁰ an online parenting program; (2) up to four individual coaching sessions to practice specific parenting skills; and (3) access to the Parent SMART networking forum. All components were available in English and Spanish.

The networking forum was developed as both a clinical extender and online supportive community. Participants could post in two Parent SMART forums: Connect with Parents was a supportive online forum where parents engaged with one another; Ask an Expert allowed parents to get information from a licensed clinical psychologist with expertise in adolescent SU. Parents could access the forum via a website or mobile app, both of which were password protected. To safeguard participant anonymity, parents chose unidentifiable usernames and were asked to refrain from disclosing personal information. Parent posts were auto-translated into English/Spanish using a google translator plugin. Bilingual study staff screened posts for identifiable content and translation errors before posting on the forum. Participants received smartphone notifications for all new content, to promote real-time engagement and responses. Parents were told posts would be visible on the forum within 24 hours; typical lag time was 1–2 hours.

Qualitative analysis of networking forums

All forum posts were imported verbatim into NVivo 12 software and coded using thematic analysis.⁶¹ No themes were specified *a priori*, given the limited literature on parents' CC needs and the exploratory nature of this analysis. Four study staff independently read all posts, to generate holistic impressions and identify recurring themes. The team then discussed impressions and themes identified, deciding jointly on emergent concepts, major themes, and formal definitions. Two independent coders then reviewed and coded each forum post. The team reconvened to discuss divergent codes, with the goal of obtaining 100% consensus. When codes were discrepant, a third independent coder made the final determination. Queries were run in NVivo to obtain frequency counts and to identify exemplars for each theme.

Results

Thematic analysis uncovered five major themes across the two forums: parenting skills; parent support; adolescent transitioning to home; adolescent SU; and family functioning, which only emerged in Connect with Parents posts. Table 1 presents definitions for each major theme and provides forum-specific exemplars for emergent concepts within each theme.

Frequency of major themes

Table 2 presents total counts of respondents and posts in each of the forums, categorized by major theme. Due to the structure of the forums, Ask an Expert posts were typically posed as questions, whereas Connect with Parents posts included a mix of questions, responses, and exchanges. Twenty-one (70%) participants posted at least once in either forum. Specifically, three parents only posted in the Ask an Expert forum, nine only posted in the Connect with Parents forum, and nine posted in both forums. A total of 15 Ask an Expert posts were made by 12 unique participants and 50 Connect with Parents posts were made by 18 unique participants.

Parenting skills

Parenting skills was the most, and second-most, frequently discussed major theme in the Ask an Expert (11 posts, 9 respondents) and Connect with Parents forums (13 posts, 7 respondents), respectively. This theme reflected discussion around how to employ parenting skills; emergent concepts included: communication, behavioral contracting, and parental monitoring, the three core Parent SMART skills. Communication (12 posts, 10 respondents) was the top skill in both forums, with posts generally addressing how to effectively connect with the adolescent, without escalating or creating conflict. Behavioral contracting posts were the next most frequent (9 posts, 5 respondents) and centered around how to set and adhere to house rules. Finally, parental monitoring (5 posts, 3 respondents) posts discussed strategies to track the adolescent's activities and techniques to ensure their safety, particularly in moments of crisis.

Participants sought different types of skill-support depending on the forum they used. For example, Ask an Expert posts sought clinical consultation on implementing specific parenting skills. Questions about communication asked, *"how do you start a conversation with your teen," "how often should I be checking in with him,"* and *"how do I get [my] teenager to recognize... she can talk about it?"* Behavioral contracting queries asked the expert how to handle *"battles"* around limit setting, how to *"stick to the rule[s],"* and how to get the adolescent to *"understand that I'm still the parent."* Finally, parental monitoring posts sought expert guidance on how to monitor high-risk or self-injurious (i.e., *"hurting herself"*) behaviors. Notably, Ask an Expert posts around parenting skills exclusively involved a parent's question followed by the expert's response; parents did not comment on others' posts.

In the Connect with Parents forum, parents often engaged with others' posts about parenting skills. The following pattern was frequently observed in this forum: a parent described their progress (or lack thereof) in implementing Parent SMART skill(s), then followed-up with question(s) specific to their situation. For example, one parent of a 16-year-old boy posted, *"I am working on Contracting. We have tried behavioral contracts in the past and I find it hard to get him to stick to it. Does anyone have suggestions on how to keep them focused on the contract?"* Parent responses would offer strategies to try or examples of personal successes implementing a skill with their own adolescent. These posts commonly reflected core Parent SMART skills, as seen in this post from the parent of a 15-year-old girl:

I can relate. My daughter intentionally says things to upset us. We do our best not to respond to her baiting and focus on whatever the current behavior/issue is in the moment. We are using the Active listening and 'I' statements but it's sometimes hard to remember in the heat of the moment.

Remaining posts introduced additional parenting skills, including pleasant activity scheduling (e.g., *"we go out to breakfast before school once a week"*); perspective taking (e.g., *"we try to remind ourselves of where our daughter was a year ago"*); and breaking requests into smaller pieces (e.g., *"I try to focus on one thing at a time so as not to overwhelm him"*).

Parent support

The second major theme to emerge encompassed parent support. This theme was illustrated by two posts (2 respondents) in the Ask an Expert forum and 25 posts (10 respondents) in the Connect with Parents forum, making it the most prevalent theme in the latter. This theme encompassed two emergent concepts: self-care (6 posts, 4 respondents) and connection and support (21 posts, 11 respondents).

In the Ask an Expert forum, for example, one parent of a 15-year-old girl offered support in response to another parent's question to the expert (an atypical use of this forum), saying:

I'm sorry you are going through this. I don't really have any answers. Maybe just tell her that you love her no matter how she identifies [as LGBTQIA+] and it doesn't change who she is to you. And let her know that you are there for her to talk to and that if she can't talk to you, you will help her find someone she can talk to because you don't want her to feel hopeless.

The second Ask an Expert post involving parent support came from a new participant, who introduced herself to the expert and said she would reach out if she had questions in the future.

Very much in the spirit of the Connect with Parents forum, the theme of parent support was characterized by parents seeking advice and emotional connection with each other. Several posts involved parents detailing their plans to respond to a given situation and soliciting moral support. Here, the parent of a 16-year-old girl posted, *"I'm sticking to my NO for an answer I feel she's going to get out of control and start a conflict ... you guys think I'm right?"* Parents commonly introduced themselves or welcome newcomers on the forum; one parent of a 14-year-old girl posted *"Hi guys! Checking in for the first time,"* and was welcomed by several others. Other posts reflected parents' eagerness for a community that offered real-time support for challenging situations. After receiving advice from others, the parent of another 14-year-old girl posted: *"We will have to follow up on what's working and things we're noticing maybe we can help each other out!"* Multiple posts conveyed a sense of relief or gratitude at knowing they were not alone in facing challenges with their adolescent. For example, the parent of a 16-year-old boy wrote, *"I am feeling the exact same way this morning... Some days are harder than others. I hope tomorrow is better. All these comments are very helpful. Hang in there everyone!"*

In addition to general exchanges of parent support, posts to this forum also sought advice on how to practice self-care during this difficult transition. For example, the parent of a 17-year-old girl asked, “*How do you as a parent keep you head on straight and take care of you?*”

Transition management

The third major theme centered on managing the adolescent’s transition home from residential care. This theme was illustrated by two posts in Ask an Expert (2 respondents) and 11 in Connect with Parents (7 respondents). This theme encompassed three emergent concepts: issues with the adolescent (8 posts, 7 respondents), medication management (2 posts, 1 respondent), and their child’s friendships (3 posts, 1 respondent).

Both Ask an Expert forum posts came from parents whose adolescents had used a substance within 24 hours of discharge from residential. One parent asked how often to check in with her 16-year-old son to avoid future instances of impulsive SU, while the parent of another 16-year-old boy asked how to know if or when her son may need to return to residential care.

Connect with Parents posts covered a broader range of transition management issues, including how to manage medications, safely reconnecting with peers, and other logistics of reintroduction to life at home. Multiple posts sought transition-related health advice from the community, including strategies to keep track of the adolescent’s medication schedule and monitor SU and mental health symptoms. Parents also sought advice on how to encourage positive friendships and other transition-related logistics. For example, one parent of a 15-year-old girl asked if he should alter her room:

Hi! I was wondering if anyone has had experience with the following... My daughter has finished a 45 day inpatient treatment and will be at a home for more treatment for at least 3 months. My question is, is it a good idea to rearrange her room and belongings as something for a new start? I feel that this may help her avoid getting into old habits?

Substances

The fourth major theme to emerge in both forums centered around substances used by adolescents; it encompassed two emergent concepts: substance legality (1 post, 1 respondent) and substance-specific comments (7 posts, 4 respondents). This theme was illustrated by three posts in Ask an Expert (2 respondents) and six posts in Connect with Parents (4 respondents).

On the Ask an Expert forum, two parents expressed concerns about the impact of vaping specific substances on their adolescent’s health, namely nicotine and marijuana. A third post asked whether changes in marijuana legalization should affect how parents address the adolescent’s SU.

Similarly, substance-related posts in the Connect with Parents forum expressed concerns around the impact of specific substances on adolescents’ health and safely. One post

addressed continued high-risk drinking; all others discussed vaping. One parent wrote that their 16-year-old son *“doesn’t understand the health consequences of vaping despite us having had several conversations. What have you said to your teen that’s been effective?”* Another parent of a 16-year-old responded, *“I have the same problem ... His primary [care physician] wasn’t very helpful with this either. It almost seems like the professionals don’t know enough about vape and how harmful and highly addictive it is.”*

Family functioning

A final theme, family functioning (7 posts, 6 respondents), was unique to the Connect with Parents forum. Analysis revealed two emergent concepts: the parent-child relationship (3 posts, 3 respondents) and effects on other family members (4 posts, 4 respondents). Posts about other family members discussed support groups (e.g., Al-Anon) and the impact of the adolescent’s SU on their siblings. For example, the parent of 16-year-old girl asked, *“Does anybody else feel as if family members judge you because of your child’s problems and if so how do you deal with this?”* Others sought support around maintaining a positive relationship with the adolescent. One parent of 16-year-old boy asked, *“How do you as parents continue to love and connect when they start slipping back into old habits?”* Two other parents then shared how they scheduled special one-on-one time with the adolescent, by going to the gym or a restaurant.

Discussion

The goal of this study is to build insight into parents’ continuing care (CC) needs by analyzing the content of an online forum for parents of adolescents transitioning home from residential SU treatment. Identifying their unique information and support needs takes a vital first step toward developing mHealth CC programs to help families navigate this challenging transition. Parent engagement was encouraging, with 70% of parents posting in at least one forum. In general, parents used the Ask an Expert forum to troubleshoot specific parenting skills and sought emotional and strategic support from community members via Connect with Parents. Parents also used the forums to discuss relapses, transition management, and family functioning.

Parenting skills emerged as the most prevalent theme among Ask an Expert posts, with 11 of 15 posts seeking guidance around parental monitoring, behavioral contracting, and communication skills. Although we are unable to evaluate to what degree, if any, the Parent SMART intervention may have influenced the topics discussed in the forum, this finding is consistent with prior research. A 2019 survey found that most parents with adolescents in outpatient SU treatment wanted mHealth CC interventions that specifically addressed these parenting skills.⁴³ Taken together, these results suggest that parents may want mHealth CC services that provide training and ongoing consultation around parenting adolescents post-discharge.

Parent support emerged as the most common theme in Connect with Parents posts, highlighting the value of a supportive online community during the post-discharge transition. Extant literature has highlighted the utility of mHealth support tools, with data suggesting that parents equally value both peer and expert feedback.⁶² Although it may not be sufficient

as a standalone CC intervention, the online forums may be a convenient tool for parents to check-in with a community of peers who understand their situation, give and receive emotional support, identify self-care strategies, troubleshoot problems at home, collect valuable information, and get advice on specific skills to use with their adolescents. When complemented by a tested mHealth intervention, like Parenting Wisely,⁶⁰ online forums may facilitate engagement and foster a sense of community, which can be a challenge for typical face-to-face CC approaches.^{17,62}

One added benefit of including an online networking forum in the Parent SMART program was its ability elucidate topics outside the scope of the intervention about which parents wanted information and support. Two other key themes that emerged in the forums included SU relapse post-discharge (especially vaping) and the impact of the adolescent's transition on multiple ecologies (i.e., friends, family). Several parent posts sought information about the about risks and consequences of vaping, as well as support around discussing or regulating their adolescent's vaping. Given the recent rise of nicotine and marijuana vaping among youth,⁶³ its links to other SU,⁶⁴ and potential health risks,⁶⁵ future mHealth CC interventions should include strategies to address post-discharge vaping. In particular, parents may benefit from education around vaping and strategies to communicate and contract around vape use post-discharge.

Parent posts also uncovered concerns about the impact of their adolescent's transition home from residential on friends and family. Notably, parents discussed these topics exclusively within the Connect with Parents online community. Parents asked how others managed social time, including how adolescents engage in appropriate friendships post-discharge. These questions are critical, as ample evidence documents powerful influence of peers on adolescent SU decisions.⁶⁶⁻⁶⁹ Parents also sought support around the impact of adolescent's SU and treatment on immediate and extended family. Siblings may be more vulnerable to SU initiation if an older sibling has a SU disorder,⁷⁰ and family stress may increase the likelihood of sibling behavioral problems.⁷¹ As such, mHealth CC programs that offer strategies to monitor sibling SU and communicate with family around the adolescent's SU may reduce stress and sibling risk.

Limitations

Thematic results that emerged must be considered in the context of several limitations. Only 30 parents received access to the Parent SMART networking forums in the pilot trial; the small sample may have limited our ability to detect topics worthy of inclusion in future mHealth CC programs for parents. Though consistent with demographics of both recruitment locations, the present sample was slightly more white, more Hispanic/Latino, and lower/middle-income than national demographics, such that these results may better reflect the CC needs of these particular populations. Future work should capture the mHealth CC needs of a broader range of parents across different types of residential settings, to ensure program content reflects the needs of all families. There was significant variability in forum engagement; parents made anywhere from 1 to 12 posts. Though variability is to be expected in a support forum context, our findings may overrepresent the needs of more engaged parents. Finally, the current analysis aimed to clarify CC themes around which

parents sought information and support; Parent SMART pilot trial results (i.e., feasibility, acceptability) are the focus of future work by our team.⁵⁷

Conclusions

MHealth technologies can increase access to and engagement in CC services following adolescent residential SU treatment, as families face multiple barriers to CC post-discharge. Online networking forums that connect parents with experts and peers can provide valuable support and troubleshoot challenges following an adolescent's post-discharge transition home. Parents may also benefit from mHealth CC programs that help them manage SU relapse and close relationships; both components will be included in a future effectiveness trial of Parent SMART. In sum, this study is among the first to explore parent-specific CC needs and may lead to future CC services that can better serve adolescents with SU disorders and their families.

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Data availability statement

Data are available upon request by contacting the senior author, Dr. Sara Becker.

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Table 1.

Exemplar parent SMART posts, by forum.

Major Theme	Ask an Expert	Connect with Parents
<p>Emergent Concept</p> <p>Parenting Skills</p> <ul style="list-style-type: none"> Communication Behavioral Contracting Parental Monitoring 	<p>Employing skills such as parental monitoring, communication, and behavioral contracting</p> <p>“Hi everyone my son recently came home from treatment and he used within the first 24hrs. Are any other parents experiencing the same? How did you handle it? I have been applying my new skills with ‘I’ statements and active listening but wonder if you may have any other suggestions or maybe just can relate.”</p> <p>“How do you start a conversation with your teen when they’re already shut down?”</p> <p>“How do you balance being empathetic and delivering consequences?”</p> <p>“Thanks so much! I will stick to the rule for sure. I will work on the learning more about Contracting.”</p> <p>“I can’t understand why my daughter is thinking to hurt herself. What can I do to help her?”</p>	<p>“I’m scared, what would happen if my son does not follow the contract rules?” [translated from Spanish]</p> <p>“She has to wait until we are around to go out with friends and be home when we say or she loses time. Chores and homework has to be done. We can watch her on our phone or tablet anytime with the camera system.”</p>
<p>Parent Support</p> <ul style="list-style-type: none"> Connection/Support Self-care 	<p>Self-care inquiries, seeking/providing support or connection with other participants</p> <p>“Hi [Expert] no questions at the moment but if one come up I’ll reach and ask away ty”</p> <p>N/A</p>	<p>“I completely understand how you’re feeling. It’s exhausting physically and mentally. I just went to my first Al-Anon meeting last week. It’s for parents. It felt nice to be around others who understood how I was feeling ... I hope you find some peace!”</p> <p>“What are some things you guys do to give yourself some space when emotions are running high?”</p> <p>“How do you as parents keep up with your needs when you’re running all over town chasing your teen?”</p>
<p>Transition Management</p> <ul style="list-style-type: none"> Adolescent Issues Managing Medications Friendships 	<p>Aspects of the post-discharge transition, concerns about peers, manage/prevent relapse</p> <p>“I understand that relapse is part of recovery but at what point is residential needed again? My son used and had risky behavior on his first day home after his discharge. We are concerned about his safety.”</p> <p>N/A</p> <p>N/A</p>	<p>“My son is adjusting back to school after 38 days inpatient and an entire semester of skipping. I’m hoping he can get back on track and he says he will. How do you trust your child while not being a micromanager[... thats what he called me today... with a 😊”</p> <p>“Due to circumstances I administer all medications at our house. Now that my son is working and getting more privileges, he is not home at the times he takes his medication. How do other parents handle this”</p> <p>“My son recently returned from residential ... substance and behavioral care. He is having a hard time finding friends to spend time with due to them avoiding him. He said either their parents won’t allow them to spend time with him or the kids just avoid him ... Any advice”</p>
<p>Substances</p> <ul style="list-style-type: none"> Substance-specific Substance Legality 	<p>Substance-specific comments, laws or legal ramifications, or relapse</p> <p>“... I am just worried he is too addicted to stop [vaping] on his own. Should I be concerned about his health with the nicotine poisoning and seek medical help?”</p> <p>“Given the current climate of medical marijuana nationwide, the legalization of it, how do you address that with your teenager? My teenager views it as a manipulation of the system to get high”</p> <p>N/A</p>	<p>“It’s highly addictive! I would take action right away by educating and talking to her as much as possible. My son is struggling to stay vape free after being in residential treatment for 30 days. He admitted he is constantly thinking of how/when is the next time he can vape.”</p>

Major Theme	Ask an Expert	Connect with Parents
<ul style="list-style-type: none"> Emergent Concept 		
Family Functioning	Parent-child relationship, or impact of teen's SU on the family	
<ul style="list-style-type: none"> Effect on Other Family Members 	N/A	"My 16yo's behavior has an impact on everyone in the family and there isn't a way to avoid talking about it ... [siblings] worry for her and about her. ... Talking about it helps them to deal with their unknowns and gives them answers to questions they have, it also lets them know we can have conversations about difficult topics."
<ul style="list-style-type: none"> Parent-Child Relationship 	N/A	"We go out to breakfast before school once a week and I try to hold to it even if there was a big fight or an issue the night before (which is common). I hope it helps him realize that I want to have "us" time no matter what, because despite my disappointment in his actions, I still want to have a relationship with him."

Table 2.

Total respondents and major themes coded, by forum.

Major Theme	Ask an Expert			Connect with Parents			Both Forums	
	Respondents (N = 12) 9 (75%)	Posts (N = 15) 11 (73%)	Respondents (N = 18) 7 (39%)	Posts (N = 18) 13 (26%)	Respondents (N = 21) 13 (62%)	Posts (N = 65) 26 (40%)		
Parenting skills								
Communication	6	6	5	6	10	12		
Behavioral Contracting	2	4	4	5	5	9		
Parental Monitoring	2	2	1	3	3	5		
Parent support	2 (17%)	2 (13%)	10 (56%)	25 (50%)	12 (57%)	27 (42%)		
Connection/Support	2	2	9	19	11	21		
Self-Care	0	0	4	6	4	6		
Transition management	2 (17%)	2 (13%)	7 (39%)	11 (22%)	7 (33%)	13 (20%)		
Adolescent Issues	2	2	6	6	7	8		
Managing Medications	0	0	1	2	1	2		
Friendships	0	0	1	3	1	3		
Substances	2 (17%)	3 (20%)	4 (22%)	6 (12%)	5 (24%)	8 (12%)		
Substance-Specific	1	2	4	6	4	7		
Substance Legality	1	1	0	0	1	1		
Family Functioning	0 (0%)	0 (0%)	6 (33%)	7 (14%)	6 (29%)	7 (11%)		
Effect on Other Family Members	0	0	4	4	4	4		
Parent-Child Relationship	0	0	3	3	3	3		

Three Ask an Expert posts and 12 Connect with Parents posts were double-coded, therefore frequency counts may not add up to the total number of posts. Sample size at the top of each column used as denominators when calculating percentages.