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Developing a tailored substance use intervention for youth exiting foster care

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ABSTRACT

Youth who are aging out of the foster care system face significant barriers to accessing substance use treatment. Mobile interventions have shown efficacy for several mental and physical health issues and may be helpful in overcoming barriers facing foster youth with substance use problems. A program (iHeLP) for substance use reduction was developed that used a computerized screening and brief intervention (SBI) followed by six months of dynamically-tailored text messages. The program was shown to focus groups of youth (N = 24) ages 18–19 who recently left foster care and had moderate to severe substance use risk. Focus group feedback was used to modify iHeLP prior to delivery in an open trial (N = 16). Both study phases included assessments of feasibility and acceptability; the open trial also included assessments of substance use outcomes at 3 and 6 months. Focus groups indicated a high level of acceptability for the proposed intervention components. Of those screened for the open trial, 43% were eligible and 74% of those eligible enrolled, indicating good feasibility. Retention through the final follow-up was 59%, and drop out was associated with involvement in the criminal justice system. Participant ratings for liking, ease of working with, interest in and respectfulness of the SBI were high. Satisfaction ratings for the texting component were also high. A computerized brief screening intervention for substance use risk reduction together with tailored text messaging is both feasible and highly acceptable among youth who have recently aged-out of foster care.

1. Introduction

Although face-to-face intervention remains the dominant form of mitigating psychosocial stress and its associated ills (Kazdin & Blase, 2011), the feasibility of providing sufficient care in this way is severely limited. Over one-quarter of the U.S. population meets criteria for a DSM-IV disorder (Kessler & Wang, 2008), yet only 700,000 health professionals are able to provide services (Hoge et al.,

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2007). For substance use disorders, this gap remains steadfast, especially in young populations, with less than 10% of adolescents receiving care in this traditional manner (Center for Behavioral Health Statistics & Quality, 2016).

Youth involved in foster care are no exception to this divide between service need and access; indeed, their outlook may be worse. Youth currently in foster care generally have less access to support services and family resources than their non-foster care counterparts (Courtney et al., 2005; McCoy, McMillen, & Spitznagel, 2008). For those who have left the system, this gap between need and availability widens over time, as the incidence of substance use increases and access to care remains low (Casanueva, Stambaugh, Urato, Fraser, & Williams, 2011).

Given such low access to services, interventions are more likely to be effective when delivered before individuals "age out" (*i.e.*, leave care at the age of majority). However, even with a connection to Medicaid and other state-supported services, youth in foster care tend not to be assessed for substance use problems or referred to treatment (Casanueva et al., 2011). In situations where services are available, barriers to access remain significant and include fears of negative consequences upon acknowledgement of substance use (*i.e.*, being removed from a program; Braciszewski, Moore, & Stout, 2014); difficulty with trust/bonds and general mistrust of institutions (Braciszewski et al., 2014; Davis, 2003); and lack of delivery, coordination, or continuity of care (Horwitz, Owens, & Simms, 2000; Schneiderman, 2004; Simms, Dubowitz, & Szilagyi, 2000). Substance use services that can overcome barriers and are tailored to the needs of youth exiting care should be a priority.

Use of computer- and mobile phone-delivered interventions is on the rise and has shown efficacy for mental health (Ebert et al., 2015; Proudfoot et al., 2013; Richards & Richardson, 2012) and physical health problems (Fanning, Mullen, & McAuley, 2012; Pal et al., 2014), smoking cessation (Bock et al., 2013; Whittaker, McRobbie, Bullen, Rodgers, & Gu, 2016), and substance use (Marsch, Carroll, & Kiluk, 2014; Mason, Ola, Zaharakis, & Zhang, 2015). These approaches offer significant advantages in content delivery, while also addressing service access. Computers and mobile phones can also increase the likelihood of honest reporting on sensitive topics (Butler, Villapiano, & Malinow, 2009). Use of these devices is nearly ubiquitous, as over 90% of young people own a mobile phone (Pew Research Center, 2017), enabling great reach to individuals unlikely to access traditional care systems. Labor costs can also be reduced, as the majority of financial resources can be allocated toward intervention development rather than service delivery. New technologies allow for a high degree of ongoing tailoring and personalization, increasing acceptability and effectiveness (Ondersma, Chase, Svikis, & Schuster, 2005). Technology-delivered approaches allow screening and brief intervention to be more readily used in settings where adolescents are typically treated, such as in primary care (see Pilowsky & Wu, 2013, for a review), which may reduce significant delays between initial development of problems and onset of treatment (Chapman, Slade, Hunt, & Teesson, 2015; Harris & Knight, 2014; Wang et al., 2005). This approach also overcomes many barriers specific to foster youth such as establishing provider-client bonds, housing instability, case manager burden, and labor costs.

Taken together, youth exiting foster care are limited in accessing substance use services due to both restricted availability and a lack of options that engage this specific population. Technology-based interventions have the strong potential to mitigate these shortcomings, as they are easily tailored, widely disseminable, and can fluidly adapt to changes in participant behavior and motivation, yet we are unaware of any such approaches being used within the foster care population. As such, we developed and sought to test initial feasibility and acceptability for iHeLP (Interactive Healthy Lifestyle Preparation), a computer- and mobile phone-based substance use intervention that dynamically adapts to fluid levels of motivation to change substance use. We hypothesized that, by collaborating with youth exiting foster care and tailoring the intervention, participants would rate iHeLP as highly acceptable, while the approach (*i.e.*, a technology-based intervention) would result in excellent feasibility.

2. Method

2.1. Participants

For both study phases, young adults were recruited from a large New England agency that provides post-foster care transition services. Inclusion criteria were: (1) 18–19 years old; (2) no more than 2 years removed from foster care; (3) a score of moderate or severe risk on the Alcohol, Smoking, and Substance Involvement Screening Test (WHO ASSIST Working Group, 2002); (4) not currently in or seeking substance abuse treatment; (5) owning a mobile phone; and (6) using text messaging at least weekly. Young people were identified through flyers and referral by agency staff, inviting them to be screened for a general health study for former foster youth aged 18 or 19.

2.2. Intervention

iHeLP combines an initial 20-min computerized screening and brief intervention (SBI) with tailored, dynamic text messaging to target substance use reduction. The SBI is adapted from previously tested models, designed and implemented using Computerized Intervention Authoring Software (CIAS; Ondersma et al., 2005), a sophisticated intervention development tool that allows for the modification and delivery of screening, assessment, and intervention, that is personalized for individual participants. CIAS is unique in that a three-dimensional cartoon character (*Peedy the Parrot*) serves as a narrator and guide throughout the process. Peedy is capable of over 50 animated expressions, mimicking one-on-one conversations.

iHeLP addresses alcohol and substance use by using an approach consistent with Motivational Interviewing (MI; Miller & Rollnick, 2013) and following the FRAMES (Miller & Sanchez, 1994) approach to brief interventions. MI has received substantial support as an intervention strategy for problematic substance use, often in single-session formats (Burke, Arkowitz, & Menchola, 2003; Hettema, Steele, & Miller, 2005; Vasilaki, Hosier, & Cox, 2006). FRAMES involves six major elements found in effective, brief clinical trials