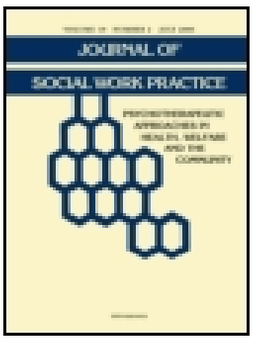

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Implementing smartphone technology to support relational competence in foster youth: a service provider perspective

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ABSTRACT

The field of child welfare continues to search for effective ways to mitigate risks foster youth often encounter. Research discoveries about the importance of attachments and relational competence for foster youth support greater well-being. However, little is known about the use of smartphone technology and companion software in foster care as a method in promoting relational competence. This qualitative implementation study sought to explore the perceptions of child welfare providers and other stakeholders regarding how smartphone technology facilitated the ability of foster youth to become more connected with trusted adults. Research results reveal challenges associated with child welfare officials' purposeful issuance and utilisation of smartphones. Stakeholders and providers viewed these challenges as learning opportunities. Three critical themes uncovered—relationship building, youth empowerment, and normalcy—provide direction for how smartphone technology might be more efficiently tapped relative to future child welfare initiatives.

KEYWORDS

Foster care; child welfare; technology; relational competence; smartphone technology

Young people in foster care are often beset with challenges affecting their well-being. Separation and loss reactions, self-esteem difficulties, academic failure, behavioural encounters, and normalcy yearnings have been documented as problems or strivings foster youth experience on a regular basis (Denby & Curtis, 2013; Pecora et al., 2009; Unrau et al., 2008). Prominent among these challenges, particularly for adolescents, is solidifying a sense of who they are in the midst of self-discovery and maturation (Alford, 2003). Due to the broken attachments, loss, and grief that many foster youth have suffered, it can become difficult to forge healthy and productive relationships, the cornerstone of relational competency. This, combined with the desire to retain a degree of agency and autonomy around their choices, self-identity, and life direction, often put foster youth at odds with their caregivers, mentors, and service providers and the expectations being set for them. Yet relationships with these caring adults are a critical part of plans for permanency and future success, so foster youth must navigate the complicated task of balancing the expectations from others with their own needs and desires (Ludy-Dobson & Perry, 2010; Alford et al., 2019). Mitigating these challenges can

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be difficult, particularly when expectations and disagreements arise over managing aspects of care. Today, the field of child welfare is keenly aware of the need to facilitate well-being in youth, as we help them to transition out of care and into adulthood. Likewise, nested in a world of advanced technologies, the field is now exploring more meaningful ways of harnessing technology to the benefit of child welfare youth.

Background

Smartphone technology usage in child welfare, as it pertains to youth in foster care, is a growing phenomenon. While previous studies have used cellphone technology to engage vulnerable youth (Bender et al., 2014; Burraston et al., 2012; Cornelius et al., 2012; Dennis et al., 2014; Katz et al., 2011; Rempel et al., 2014; Rice et al., 2011), child-welfare providers and stakeholders continue to raise important questions about the use of technology in interventions for this population. For example, can smartphones used for specialised child-welfare purposes to help foster youth feel more empowered? Can smartphones be a means for foster youth to build connections and relationships with others? Foster youth, like other young people, are industrious and seek to feel connected to each other and to the outside world. Restrictions and controls on how and what are permissible smartphone applications and when and where to use such phones can be barriers to that connection. Custodial adults, providers, and mentors are often in decision-making roles for foster youth, but this responsibility can be onerous, especially in making rules about smartphone usage (Alford et al., 2019; Denby et al., 2016). It is critical to strike a balance between allowing foster youth to use technology responsibly and still providing appropriate boundaries from caregivers and other caring adults.

While data on smartphone usage among foster youth are limited, findings from the general population reveal that about three-quarters of teens ages 13–17 own a smartphone (Smith, 2015). Yet, those most in need of phones and the type of information that can be facilitated by them are in the most precarious situation with respect to access (Finn et al., 2005; O'Donnell et al., 2012). Very little is known about the purposeful use of smartphone technology as a mechanism to increase relational competence in foster youth.

Purpose

This study explored smartphone usage and the potential that the technology has in enhancing connections, bonds, and trusted relationships for vulnerable youth. Specifically, the study measured the perceptions of a group of child-welfare stakeholders and providers concerning the extent to which a planned intervention using smartphone technology achieved its intended impact – increasing the relational competence of the youth participants. Researchers devised an implementation study to explore the experiences of child-welfare providers and stakeholders in issuing to foster youth a specially designed app, enabled through a smartphone, as well as companion software for providers.

Prior to the study reported here, there had not been an attempt to create a phone app for foster youth with the expressed purpose of positively affecting the acquisition of relational competence skills. The app that was designed for the youth in this project was

intended to reinforce face-to-face services and provide support through the implementation of learning points – educational resources and tasks – that were sent via the smartphone device (Alford et al., 2019). Likewise, although service providers and programme implementers operated from the premise that the caregiver–youth relationship is primary in helping young people connect with adults and develop relational competence, they hypothesised that smartphone technology, as a communication device and a mechanism for expanding intervention, could influence a youth's ability to develop skills in relationship building. Ultimately, providers, stakeholders, and research partners sought to understand implementation challenges and examined the experiences and perceptions of how the devices connected youth and aided in the development of relational skills – or how they did not.

Study context

This analysis joins two earlier studies that measured the perceptions of foster youths (Denby et al., 2016) and caregivers (Alford et al., 2019) regarding the manner in which relational competence was influenced by the use of a specially designed application installed on smartphones. This study was part of a larger, multifaceted project aimed at building relational competence in current or former foster youth ages 12–21. The five-year federal demonstration project, (title withheld for de-identification purposes) funded by the U.S. Department of Health and Human Services, Children's Bureau, took place in Las Vegas, Nevada from 2011–16, serving 53 families and 182 youth. The young people were assigned a youth specialist who worked with them for a year, one-to-one, including weekly in-person engagement and several electronic contacts throughout the week. Youth, some currently in a foster care placement and some formerly, each received a smartphone as part of this project. A wide variety of child welfare professionals, researchers, and stakeholders lent their expertise to this project. The lead agency for the project was the Clark County Department of Family Services, and the Department worked closely with a number of other organisations in planning, implementation, and evaluation. These organisations included: The Lincy Institute, who led the research and evaluation components of the project; the local chapter of Big Brothers Big Sisters, whose volunteers served as mentors for the youth participants; S.A.F.Y of Nevada, who trained and supported caregiver participants; Olive Crest Nevada, who took over the hiring and management of the youth specialists; the S.P.I.R.I.T project, who developed the smartphone technology examined in this study; and other service providers. The study's research team consisted of senior-level researchers, student research assistants, and a research project coordinator. Current and former foster youth leaders also played a critical role in the implementation and evaluation of the project. See Figure 1 for a detailed display of the project stakeholders.

Others, like the Children's Attorney Project (CAP), also contributed to the study design and implementation. In Clark County, foster youth are assigned attorneys, known as CAPs, to represent their interest while engaged in the child welfare system. Because the youth in the study had legal representation, we had to make sure that the attorneys were in agreement with the workers providing consent for the youth to be involved in the services and the study. The CAPs also consulted with the research team to ensure the safety and security of the youth in the use of the smartphone technology.

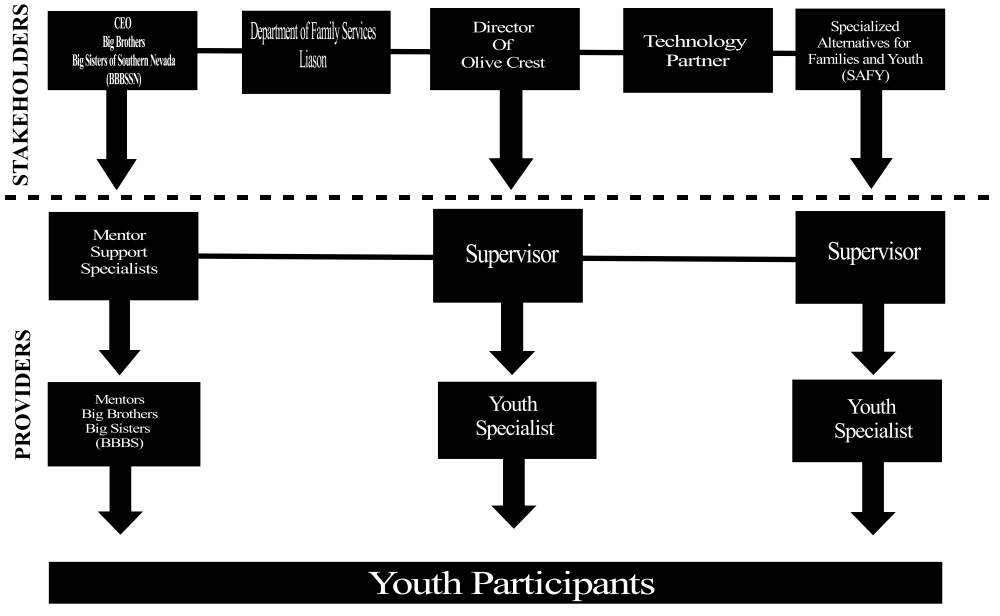

Figure 1. DREAMR project organizational flow chart.

Literature review

What is known about the use of smartphones in service delivery

The digital age, as we know it in present times, encompasses myriad aspects of interactive communication, inclusive of social media. Social media continues to rise in prominence and is of consideration in our discussion of smartphone utilisation. Smartphone technology and social media can bring about many benefits for youth in the child welfare system, serving as a tool for connecting and communicating with family members, caregivers, and case managers and as a means of sharing educational resources and information. Preziosa et al. (2009) advocate that there is value in therapeutic application of mobile phone usage. Bender et al. (2014) found cellphones to show the most promise for maintaining contact with youth, especially related to service goals, and influencing youth perceptions of service stability and assistance. This supports Katz et al. (2011), who strategically used cellphones to engage populations that stood to gain the greatest benefit from consistent support and services.

Rice et al. (2011) share that social networking technology, such as internet and cellphones, may be significant in contributing to prevention efforts when working with youth. Preziosa et al. (2009) suggest that attention has shifted from the internet to mobile features, given the phone's 'stronger impacts on social life' (p. 322). They discuss the impact of this trend on the provision of therapeutic services through technology. For maintaining a thriving therapeutic relationship, real effectiveness of this tool depends largely on the therapist's ability to distinctly assimilate all mobile phone features into the clinical procedure. Reid et al. (2013), in their evaluation of a mobile phone self-monitoring tool, affirm that adolescence is a critical phase of life for early intervention

and prevention of mental health concerns and that the self-monitoring tool they evaluated accurately captured adolescents' experiences of mood, stresses, and other mental-health-related symptoms.

Yet these technologies and platforms can also pose a number of risks, including ethical and boundary concerns for child welfare professionals, as well as safety and privacy considerations for all involved (Stott et al., 2017). Livingstone and Smith (2014) define three categories of risks for youth:

> Content risks (which generally position the child as the recipient of mass produced content), contact risks (generally an adult-initiated online interaction which requires the child to participate, possibly unwittingly or unwillingly) and conduct risks (where the child is an actor or interactor within a wider peer-to-peer or networked interaction). (p. 637)

Stott et al. (2017) suggest that foster children and youth may have the most to gain or lose by being denied or ill-prepared for careful usage of technology.

To address these risks, child welfare agencies are revisiting their internal policies associated with how smartphones are used. Stott et al. (2017) posit that agencies would reduce their liability risks and benefit their staff and clients by developing policies that offer guidelines to protect the privacy and safety of their agency, staff, and clients. Yet safeguarding online and mobile technology in an effort to reduce or thwart dangers to children is challenging. Livingstone and Third (2017) emphasise the need for balance between restricting the use of social media and other online platforms as a means of protection and recognising youth's rights to digital participation. They discuss how the traditional view for technology use policies – restricting access in the name of protection – may also limit youth's ability to connect and express themselves. Hence, respecting the rights of children to access such technologies appropriately – through policy and practice – so as to be helpful in therapeutic ways is key.

What is unknown about the use of smartphones in service delivery

The literature is increasing regarding youth in foster care and their smartphone usage, particularly in relation to the maturation process (Denby et al., 2016; Preziosa et al., 2009; Reid et al., 2013). However, within the field of child welfare, more pragmatic understanding is needed about smartphone technology implementation. For example, we need to better understand the therapeutic value of smartphone technology to youth. Likewise, we need to understand the extent to which providers see value and utility in the devices. Finally, we need to understand some of the challenges and roadblocks to using the devices for therapeutic purposes. The study reported herein adds to the literature by reporting the insights of child-welfare providers and other stakeholders concerning how smartphone technology assisted the capacity of foster youth to form bonds with trusted adults and empowered them to demonstrate aspects of relational competence.

Overview and theoretical perspectives

Importance of relations and connections for vulnerable youth

To define the concept of relational competence, it is important to understand it through its theoretical orientation of Relational Competence Theory (RCT). RCT defines relational and competence as separate terms. 'Relational' within this context means that there are prolonged bidirectional and interdependent exchanges between two or more individuals. 'Competence' refers to how effective we are in dealing with ourselves and others, intimates and non-intimates, during stressful and non-stressful events at various stages in our lives (L'Abate et al., 2010). For the purpose of this study, we use the concept of relational competence to refer to the socioemotional issues that may stand in the way of youth gaining and maintaining healthy and significant relationships.

RCT supports a contextual construct that includes settings like home, school/work, and leisure-time activities where relationships evolve (L'Abate, 2006). RCT also embodies a focus on the ability to control and regulate self, identify relationship styles, and gauge the purview of intimacy and negotiation (L'Abate et al., 2010). Relational competence is emboldened by social support, and relational tenets like reciprocity, closeness, and negotiation are firmly linked to the underpinning and processes of human development (L'Abate et al., 2010). Similarly, positive social relationships are protective factors against contextual realities and systemic challenges, both familial and sociocultural (Howe, 2005).

Complementing Relational Competence Theory is the well-documented attachment theory. Attachment theory provides a perspective for understanding human bonding, as it connects the health of the relationship between an infant and mother or primary caregiver with that child's development and ability to form healthy relationships later in life (Bowlby, 1969/1982, 1973; Ludy-Dobson & Perry, 2010). Ludy-Dobson and Perry (2010) state that the 'development of emotional, social, cognitive, and self-regulatory capabilities' is impacted by this primary relationship (p. 31). Trust and contentment are other elements of attachment theory that become apparent in relationships later in life. Attachment theory is therefore part and parcel of engagement and the ability to connect with others (Fraley & Shaver, 2008; Johnson, 2002; L'Abate et al., 2010).

For vulnerable youth, relational competence is an especially important concept to address through intervention. Children raised in environments that were neglectful, abusive, or otherwise unsupportive often have had negative developmental changes in their ability to receive and form healthy relationships because of their lack of healthy attachments at a young age (Ludy-Dobson & Perry, 2010). Relational proficiencies for youth in care should be taught when needed, as interpersonal skills are needed for optimal functioning and may become impaired in foster youth, given the aforementioned challenges. Relational competence is essential because it protects youth from spiralling in a downward cycle where negative behaviours (e.g., substance abuse and criminal activity) are a risk. Building relational competence through mentoring relationships or service processes can play a major role towards accelerating a young person's chance in life to succeed.

Supporting healthy adolescent development is especially important when working with youth who are in care. Likewise, adult mentors must be willing to help young people build protective mechanisms such as prudent decision-making and logical reasoning. A relational bond – undergirded with an emotional connection – has beneficial rewards that can manifest through peer relations and social networks (Brown & Gilligan, 1992;

Calhoun et al., 2005). This study endorsed the concept that a dependable and reliable relationship between two people, in this instance between an adult and a child, is a principal characteristic of emotional health and growth (Ahrens et al., 2008; Collins et al., 2010; Gowen, 2011; Greeson & Bowen, 2008).

Miller et al. (2016) explored how foster youth and alumni conceptualise mobile apps as a way to help transition from foster care to adulthood. Their goal was to advance a framework that could be used by foster care practitioners and researchers, from the perspective of youth and alumni, on which to base app technology development. The feasibility of smartphone usage and the need for selected apps were patently explicated in their research. Their qualitative findings suggested that peer connections, connection to resources, and overall functionality and accessibility would improve, given appropriate app utility (Miller et al., 2016). This improvement is intricately linked to relational competence.

While previous studies on smartphone technology have focused on aspects such as smartphone app development, this study expands the literature by making a more abstract inquiry (i.e., is smartphone usage among foster youth able to bolster relational skills and help them increase their ability to connect with peers and other adults?). Guided by the aforementioned conceptualisation of relational competency, our study used a qualitative design to understand the connections between youth and service providers, from the vantage point of providers serving youth who received a smartphone as part of their involvement in the research project.

The project

Smartphone app

As part of this study, the research team contracted with a software developer to create an app that service providers could use to communicate with the youth they were serving, monitor usage data, and improve their overall relational competence. The Android software-based app helped the youth to facilitate effective and productive communication, with the goal of building social support network capacity with family, friends, and other significant individuals. The app also enabled youth to communicate and schedule appointments with their mentors, caseworkers, and service providers, and it allowed providers to send their youth reminders of appointments, alerts, and other communication prompts (Alford et al., 2019).

By providing the smartphones, mentors and other providers were also able to reinforce in-person services by sending electronic 'learning points' to the young people (Alford et al., 2019). Providers developed learning points for each youth as a means for staying in contact between appointments. These brief messages were personalised to the youth's need and contextually based in the tasks in which the youth and his or her provider were engaged. For example, a provider might construct a learning point in the form of a link to a website that contained information about a particular task or goal through which the youth was working. Other types of learning points might be a short article or poem containing a reflection or an example of someone who might be grappling with issues similar to what the youth was working on. Learning points could also include reminders to complete therapeutic tasks, a reflection question about the youth's day, a check-in question, or a short summary reflecting a previous milestone the youth met to reinforce goals and behaviour.

The app was also used as a data collection platform. Surveys were sent periodically to youth participants through this technology, to gauge their overall involvement and satisfaction with the project, services received, and the contacts and support from their providers. Service providers received logins with password protection that enabled them to use the corresponding software on their computers. This allowed providers to enter and share case notes with other team members, schedule appointments, or send communications to youth. The information and communication between the youth and their providers were stored on the technology partner's server, and there were security measures in place to safeguard the data. Data were secured and encrypted by the technology partners; upon transmission, the data would be scrambled or unreadable to anyone not possessing the proper key or codes. The research team and the technology company had a university and IRB-approved data sharing agreement that enabled them through a double password-protected method to transfer only the survey data during regular, timed intervals throughout the project. For privacy and safety reasons, the research team did not have access to the youth and provider's conversations or case notes.

Smartphone distribution and safety restrictions

Within the first month of project participation, the youth received their phones, and youth specialists oriented them and their caregivers to the phone and to programme expectations. Upon successful completion of the one-year commitment, youth participants were able to keep the smartphones. If the youth chose to leave the programme early, they were required to return the smartphone, but they were able to keep the SIM card housing their private information (Alford et al., 2019). While the youth were not responsible for any phone service charges during the one-year project, upon programme completion, youth were expected to set up the phone service account in their name or in the name of a caregiver. Legal representatives and/or caregivers reviewed the user agreement in the company of the youth and verified receipt by co-signing the form (Alford et al., 2019).

In addition to the app installed on the phones for the purposes of reinforcing communication between the foster youth and their caregivers, workers, mentors, and providers, other features of the phone were gradually released to the youth based on completion of programme requirements throughout the year (Alford et al., 2019). For example, by keeping all of their appointments, being on time, returning messages, and completing therapeutic 'homework' and tasks, they could receive more minutes, expanded data capacity, or the ability to download games or apps. Another purpose of providing foster youth with smartphones was to enable them to connect and network with family. In this instance, family would consist of members from both foster and birth families, if appropriate. The smartphone facilitated links to family members or friends, or even siblings with different caregivers than the youth participants (Alford et al., 2019).

The time-released phone features mentioned above were one way the project sought to mitigate some of the risks associated with smartphone use. Other features were disabled upon issuance of the phones. For example, at the request of the young people's attorneys, the project leadership agreed to disable GPS tracking. Youth were made aware of pertinent limitations and were asked to agree to a list of restrictions that consisted

primarily of an approved call list (i.e., people that the youth were permitted to contact) (Alford et al., 2019). Limiting a contact list was a unique feature of the smartphone app that allowed service providers to safeguard their youth participants and address some concerns expressed by caregivers and caseworkers. Additionally, caregivers were told, in the presence of the youth, that they could limit the young person's time on the phone and establish family rules about phone use (Alford et al., 2019).

Method

Design overview

Bhattacharyya et al. (2009) view implementation research as being conducted primarily for four purposes: to translate knowledge or exchange results as a deliberative process between producers and users of research; distill knowledge and find core evidence that can be used to guide practice; combine ethical applications and values with clinical effectiveness to determine and promote reasonable interventions and paths; and improve services in an effort to promote better health and social well-being of a population. For the purpose of this article, an implementation evaluation is considered as a deliberate process used to translate, communicate, or inform an audience of stakeholders about a practice approach and the results that were garnered from it (Bhattacharyya et al., 2009). We consider this research method adequate, due to the complex nature of the smartphone service and the composition of our sample. Our sample consisted of individuals who could provide qualitative data about the use of the smartphones by the young people, and could also provide process data and information relevant to the context in which the service was implemented, such as organisational culture and leadership.

Sample and data collection process

We report the processes and procedures used to ascertain the perspectives of several critical groups: mentors, providers, and other child-welfare officials who were involved in project implementation. While mentors and service providers worked closely with youth participants for an average of 12 months, child-welfare officials (also referred to as stakeholders) were members of the planning and implementation committee for the overall project and had a more profound understanding of the intended conceptualisation and logistics of the smartphone as a service delivery apparatus.

The primary data collection approach used was focus groups. We chose this qualitative methodology, given the relatively innovative nature of the project and the limited amount of existing research concerning the use of smartphone technology to build relational competence in foster youth. The recruitment process involved sending electronic communications to providers about the purpose of the focus groups, date, time and location. Those who were interested in participating received contact information to learn about the university-based research team and to convey their desire to participate in one of the focus group sessions. The providers were known to the research team because in most cases, they were the case workers who consented the youth into the study at the start, or their names and contact information were part of the youth's baseline assessment and information portal. At the time of the initial youth consent for the services and study,

it was disclosed to them and their providers that study involvement could include follow up invitations to participation in data collection related to their experiences with the services. Providers regularly completed study and project questionnaires and provided updates about the youth's involvement in services.

Our sample pool of 33 individuals therefore included the service providers, as well as members of the project's steering committee who had been working on the project for at least a year and were familiar with the smartphone service and its implementation. Our final sample consisted of 14 out of the 33 eligible participants – two mentors, six service providers, and eight child welfare stakeholders. The remaining 19 eligible participants, who we were unsuccessful in recruiting for study participation, were the youths' volunteer mentors. They conveyed to us that their varying schedules and commitments conflicted with the times offered for the focus groups.

In designing our data collection approach, we gave care and attention to exploring with the research team (which included former foster youth) how we planned to compose the questions, the number of groups and/or interviews we would hold, the type of participants in each group, and our roles in conducting the interview process. Ultimately, the research team allowed joint teams of researchers and former foster youth to determine the grouping of participants. Additionally, we varied the composition of the focus groups, based on the sociodemographic characteristics of members. Each of the three mixed-representation groups ran for 90-min and were audio-recorded, with the permission of the participants. The interviews were facilitated by an independent research consultant who exercised a greater degree of objectivity than the internal research team. Finally, the following probe questions were used:

(1) Describe the implementation process that was used to integrate smartphones into the project.
(2) Describe the general use of smartphones and your attitudes towards the availability of the phone.
(3) Discuss the extent to which you found the smartphones useful.
(4) What successes did the project have in achieving its objectives related to using the smartphones?
(5) What failures did the project experience in achieving its objectives related to using the smartphones?
(6) Please discuss whether (and if so, how) the smartphone played a role in helping youth to establish healthy and positive relationships with adults.
(7) How satisfied are you with the use of smartphones in the project? Any suggestions for changes or improvement?

Data analysis

The recordings of the groups were processed and transcribed by an independent research contractor specialising in qualitative research. The contractor processed the data using NVivo (version 11), a computer program designed to aid in analysing unstructured data by coding and organising large and robust data files. This software enabled the processor to create patterns and pinpoint connections with the data themes. Upon initial processing of all data, the contractor and the internal research team worked together to read the

pattern-based automatic coding, then analysed and interpreted the transcribed data and thematically ordered content. By using thematic method structuring, we were able to embed ourselves in the data and evaluate their meaning (Boyatzis, 1998; Braun & Clarke, 2006; DeSantis & Noel Ugarriza, 2000; Vaismoradi et al., 2013). Through a team process, researchers, the research contractor, former foster youth, research participants, and stakeholders studied the text, summarised and interpreted notes, and reduced the results into several major conceptual categories.

Trustworthiness and dependability

The qualitative design of this study enabled us to institute additional safeguards to establish trustworthiness (validity) and dependability (reliability) of our data. The data planning, collection, processing, and interpretation processes were methodically and deliberately structured, using multiple strategies recognisable in studies that use naturalistic inquiry and seek to establish trustworthiness in the data (Cohen & Crabtree, 2006; Graneheim & Lundman, 2004; Lincoln & Guba, 1985; Polit & Beck, 2010). The goal of establishing data transferability was preserved by using a rigorous and steady design (Cohen & Crabtree, 2006; Glesne, 2011; Graneheim & Lundman, 2004). The study manual, or research diary, that we created was influenced by the work of Swinton and Mowat (2016) and established an audit trail that would enable another researchers to discover the questions we posed, why they were posed, how we grappled with our own biases and curiosities, and why we made the decisions that we did. Additionally, we attempted to maintain a purist interpretation of the naturalist approach by resisting our own interpretations or assigning meaning to the data. To the extent possible, rather than describe the findings with categories and labels that we created, we attempted to increase trustworthiness in the data by using the participants' words and their personal narratives. This approach enables our readers to arrive at their own conclusions about what the data convey and acknowledges that the readers' interpretations could be as valid as or own.

To this end, we used a collaborative process, involving a university-community team of foster youth, providers, child welfare officials, and research staff. In addition, we chose member-checking to increase our confidence in the data and related interpretations. The research participants were provided verbatim transcripts of their responses and were asked to review the transcripts and make any needed corrections or clarifications. Member-checking interviews were held with stakeholders and providers in their natural environments or settings, increasing their comfort level. This process proved meaningful in facilitating the sharing of rich content and allowed for prolonged engagement (Streubert & Carpenter, 2011).

We incorporated thick description in our methodology, thereby permitting readers to consider alternative interpretations of the findings. Thick description provides depth and a thorough depiction of data themes (Glesne, 2011; Graneheim & Lundman, 2004). This approach may also help readers gauge how portions of the results might be useful in other contexts, in practice settings, or in exploring other child welfare issues. Moreover, the way the original data points, themes, and perspectives are offered here helped us to delineate findings so the research participants' voices and perspectives could be fully illuminated (Graneheim & Lundman, 2004; Lincoln & Guba, 1985). Finally, peer debriefing was employed through consultations with fellow faculty research peers.

Results

Participants

All 14 service providers, mentors, and stakeholders were female. Their ages ranged from 25 to 57 years, and their mean age was 39 years. Six participants reported their race as European American, three described themselves as African American, three self-identified as Hispanic, one participant indicated Asian for race, and another indicated American Indian/Alaskan Native. Five participants were social workers, four worked in education, and one worked in public health. Four participants also reported working in 'another related field.' When asked how much time they had worked on the project, the majority of respondents reported 19–24 months of involvement.

Thematic categories

Iterative rounds of data reduction and analysis ultimately enabled the categorisation of the findings into four major themes: (1) implementation challenges, (2) relationship building, (3) youth empowerment, and (4) normalcy. Table 1 summarises our findings, along with some relevant quotes pertaining to each theme.

Implementation challenges

Challenges related to the smartphone service provision were prominent during the focus groups. For example, the lack of involvement from caregivers and the youths' attorneys during the planning phase of the programme threatened the proper implementation of the smartphone service. Many stakeholders pointed out that caregivers did not understand why their youth were receiving a smartphone, and attorneys for the youth were often concerned about their clients' privacy and how the use of the phone might put the clients at risk. One stakeholder reported, 'Once the sides got together and discussed, then went back and forth, I think it came together … in some type of settlement.'

Furthermore, the project team had planned to use the phone app to allow the user to access only certain features. The phone was intended to be used so the youth could connect only with a group of people approved by their caseworker, regardless of the youth's age. However, the project team realised that these restrictions were unenforceable because the app often crashed, allowing the user to access all features, resulting in several problems, including excessive data usage. When this happened, service providers had to take phones back from the youth to correct any problems. This was a burden to service providers and also to the young people they served, who were often deprived of using their phones, creating some friction between the youth and the service providers.

Two subthemes related to the implementation challenges are communication breakdown and unfulfilled expectations. For example, one area that challenged the envisioned implementation of the smartphone was a communication breakdown across the various levels and groups involved in the project. Another area that seriously affected communication among providers was the issue of staff turnover. For example, new managers assigned to coordinate the programme were typically attempting to juggle several other programmes at once, when a large and complex programme such as DREAMR needed

Table 1. Thematic categories from service provider and stakeholder responses.

		Concept	Stakeholder Quotes	Service Provider Quotes
(I) Implementation Challenges	Subtheme Communication Breakdown	The changes in leadership prevented the team from carrying out the intended vision (i.e., using the smartphone as a research incentive and as a mechanism to increase youth engagement) of the smartphone.	*'… having leadership in the grant that didn't fully maybe understand the vision or the players to be able to bring everybody together.'*	*'… ultimately with the changes in leadership and everything, it kind of changed how we dealt with kids.'*
	Unfulfilled Expectations	Technological resources did not meet the needs of the project	*'[The technology partner] kept saying the phone is programmed in such manner that youth cannot break out of it and go into regular cycle … [but] kids know how to break in and out of everything.'*	*'… when [caregivers] find out [youth] can do that [override the phone software] … it kind of caused problems, amongst everybody, it makes us look as if we're not keeping our word.'*
(II) Relationship Building		The smartphone helped to enhance connections with providers	*'And the first time that [the youth] reached out, she texted her [worker] and said: "Let's go to the movies this weekend," which was the first time she initiated contact.'*	*'[The youth] was able to commit to things and not back out, to be dependable to the point where, if she needs to back out, rather than just letting me show up and saying "I'm sorry I can't go," she would actually call me or text me and let me know.'*
(III) Youth Empowerment		Youth used the phone to have an input in the services they were receiving	*'[The smartphone] allowed youth to make their choices and decisions, and do what they want in the whole process.'*	*'The fact that they can use the phone to contact their worker, or youth specialists – that was empowering.'*
(IV) Normalcy		Using the smartphone was seen as a normal activity among teenagers	*'you have to think outside the box a little bit … but [youth] were able to be normal kids … they were able to do the things with those phones, that their classmates, their peers, kids who have never been in care, do with those phones.'*	*'… A lot of time, the youth are kind of embarrassed to let people know that they're in care; so to say "Here is my phone number," then that also helps.'*

strong leadership. According to a stakeholder, these changes in leadership caused tension among the partners involved. The same stakeholder explained that as a new manager:

> "If you do not understand the role of the phone, not only as an incentive but a component to some of the relationship building … and maybe don't have the institutional knowledge

about how that developed from the beginning … then you could miss the opportunity to really take a step back and say, 'How could we make this work?"

Also, the technology partner was not always able to meet the unique needs of the youth population served by the demonstration project. All participants discussed the differences between what they were told the smartphone would be able to do (or not do), but the resulting service was often different for various reasons. One stakeholder felt that the team was so excited to use this new technology – and felt so hopeful of what it could accomplish – that they failed to consider and evaluate the efforts needed to achieve their goals, 'not only from a programmer standpoint' but also 'from a timeline standpoint, from a financial standpoint, and really looking at all those issues,' before moving forward with an implementation plan.

In response, the technology partner expressed that 'their system was a new technology that was not designed specifically for [the project]; it was designed for universal use.' According to the technology partner, the project had certain needs 'that really didn't apply to the universal use … so this created some challenges for the software developers,' who were continuously creating 'some kind of patches in the system … to address the needs of the project.'

All of this miscommunication at the managerial level led to some direct-practice repercussions, and ultimately, the direct service providers tried to explain to the youth the problems experienced by the cellphone provider. In addition, phone service disruptions were frequent, and on many occasions eroded the trust that they had built with the youth. A service provider stated:

"We had a problem because it was like: 'Okay, we keep calling these youth, and they're not calling us back. When you would ask the youth, they're like: 'No, nobody's calling me.' So it was a lot of miscommunication."

Relationship building

Having a properly working phone was helpful in establishing and strengthening relationships. A service provider stated that some youth had become committed and responsive to the services, and the smartphone served as a tool for interpersonal skill building. One provider stated: 'It took a really long time, but it finally got to a point where the youth was able to commit. The youth became dependable to the point of if they needed to cancel a visit, he or she would actually call or text.'

There were additional examples of the phones creating opportunities for youth to connect and build positive relationships with their workers. One stakeholder described an account in which a youth who had been hesitant to engage before used the smartphone to reach out to her worker:

"So there was this girl in the program … who was … very withdrawn … just very difficult to break through. And the first time that kid reached out, her [worker] drug her to some event and she won a movie gift card. And she texted her [worker] and said 'Let's go to the movies this weekend,' which was the first time that she had ever initiated contact."

Possession of the smartphone also meant there was the potential for consistent communication, which helped to maintain relationships. One stakeholder stated:

> "It was real important, I think, for so many youth in foster care experience adults telling them that they care, that they're there for them … but when it comes down to it, for whatever reason, they weren't able to maintain contact with that adult. But with the cellphones, there was a way for them to maintain contact with that adult."

Nonetheless, when the phone did not work, it inhibited the efforts of service providers in forging relationships with participants. One provider explained: "It kind of prevents [mentors] from having that constant contact, which helps build [the] mentoring relationship."

Youth empowerment

Across the focus groups, participants reported satisfaction with services and positive feelings about having the smartphone. According to respondents, the smartphone allowed youth to stay in touch with family and friends. One stakeholder described the smartphone as a 'way to connect with people and maybe feel more power.' The same stakeholder added: 'To have a phone is power and control, because, I mean when you're living in a foster home, you're like kind of walled off from people.' Many stakeholders believed possession of the smartphone allowed 'youth to make their choices and decisions, and do what they want … in the whole process.' Also, many respondents described how the phone was useful particularly to those young people who had aged out of the child welfare system, or for those who were pregnant or parenting, because the cellphone was the only way to connect with other people. One provider said:

> "The [phone] really helped her [youth] with her doctor's appointments, and that helped her to be able to advocate for herself. [Youth] were able to plan their outings with their mentors, versus having to go through their caregiver, their parent, whomever it was. They can make those plans on their own."

Normalcy

Despite the series of challenges faced during the implementation of the service, a number of positives were experienced by the youth, including the fact that smartphones, data usage, and texting with friends gave them opportunities to feel like every other teenager in their community. As one stakeholder reported, the youth 'were able to be normal kids … they were able to do the things with those phones that their classmates, that their peers … do with those phones.'

Stakeholders talked about how foster youth used smartphones to text with friends, take photographs, and access the internet, even when they were not prompted to do so. A stakeholder saw this behaviour in a different way by saying, 'If a 16-year-old has gone all of her life without a cellphone when all her peers have had 'em for [years], of course they're gonna stay up all night – that's what they do!'

Discussion

These four themes demonstrate that there were negative, positive, and unintended consequences of smartphone use by foster youth. Negative consequences included the perceived challenges associated with the use of the smartphone technology, including the

functionality of the device, and positive results included perceptions of how the device met its intended purpose. Unintended consequences included the lessons learned and multiple perceptions of how smartphone technology could be implemented in future service models and interventions. Most focus group participants perceived the use of smartphones among foster youth in the project favourably, even though it proved to be logistically challenging. Stakeholders and providers viewed the challenges as learning opportunities. They saw the use of the smartphone as an opportunity for building connections and for teaching youth about responsibility and decision-making. While the phone itself became a means for the youth to stay connected with others, they also had to demonstrate responsible use and ownership, inadvertently ushering in important life lessons about discipline, structure, and rules. The themes of empowerment and normalisation prevailed across the various interviews and during the focus groups as positive attributes of the smartphone.

With respect to implementation barriers, respondents described technological (i.e. the phone app) and non-technological factors (i.e., staff turnover and changes in leadership) that posed a threat to the delivery of the smartphone service. All parties involved in the project expressed some level of frustration when the smartphones and applications did not work properly, crashed repeatedly, or required updates that were time-consuming and inconvenient. The technology partner made it clear that the needs of the project were unique and that the design of their software had to be recoded, which required additional time and costs before the project began and during the initial stages of implementation. It is important to note that the technology partner had limited experience using the smartphone's specialised app in relation to child welfare; therefore, it appears this project was also a learning experience for them.

As a result of implementation obstacles, many youth developed a sense of distrust or felt that they were not told the truth when they were not able to use the phone as they had anticipated. Also, with frequent staff turnover, the original vision and purpose of the cellphone dissipated every time the programme faced the leadership of a new manager, who often had other priorities.

Some suggestions for change were made by stakeholders and providers. Their first suggestion was to enhance communication so that all parties involved – youth, caregivers, caseworkers, and attorneys – could share in the decision-making process related to the project. Other respondents encouraged simplifying the programming of the cellphone technology or perhaps using only rudimentary cellphones with phone call and text message capabilities. However, this last recommendation challenges previous research findings, suggesting that smartphones with complex multimedia applications can be successful and are enjoyed by the youth (Cornelius et al., 2012; Dennis et al., 2014). This is another area that requires further investigation to ensure that programming and service needs are in agreement.

Study limitations

The exploratory nature of this study calls for caution in applying the findings to other practice settings. The use of technology in child welfare is relatively new, and the use of smartphones to increase connections for youth and promote relational competence is at its earliest stages of development. There were limited studies and findings that guided our work.

The cross-sectional nature of the research, coupled with the qualitative design that used a small and selective sample, adds to the caution. The primary units of analysis in this component of the study were service providers and project stakeholders. Youth self-reports, perceptions, and experiences (as was that of caregivers) were conveyed in subsequent analyses (Alford et al., 2019; Denby et al., 2016). Nonetheless, data results reported herein could have been more compelling if there was the ability to triangulate multiple perspectives (youth, caregivers, and stakeholders/providers). It was not possible to combine all study components into one analysis, given that slightly different probe questions and instrumentation were used to register the perspectives of the various participant groups; therefore, it was not feasible to draw direct parallels and comparisons. Where appropriate, we did attempt to discuss the data results of stakeholders and providers (the groups studied here) in the context of what had been previously discovered about the perceptions of the youth and caregivers. However, there was no purposeful attempt here to compare and contrast providers and stakeholders' perceptions with those of the youth and caregivers from the larger study.

Implications

Provider-youth relationships

Although the evaluations of smartphone usage by providers, mentors, and other stakeholders were affirming, perhaps these results should be tempered by other research findings (Denby et al., 2016), which note that caregivers may be more apprehensive and less optimistic about the use of smartphone technology with foster youth. See Denby et al. (2015) and Denby et al. (2016) for a more detailed review, respectively, of caregivers' and youths' perspectives associated with smartphone utilisation in foster care.

The exploratory nature of the research presents endless opportunity for additional thought around how foster youth, mentors, providers, and other stakeholders interact around the use of technology. In this study, we witnessed how foster youth and their providers were able to forge meaningful and consistent connections with one another. The smartphone technology positions the foster youth and their providers to be less dependent on caregivers and workers to process and discuss the various experience the youth are encountering. In an era where providers are often overextended but still desire to remain a catalyst for change through supporting positive growth and development in foster youth, smartphone technology has enabled a platform for spontaneous contacts, planned engagement, and responsiveness in moments of crisis.

Based on observations by service providers, youth who had the smartphone and app were able to direct their own services, care, and support systems, which could prove to be vital as youth age out of care and face a period in their lives when they need to exhibit greater independence. As we see in other studies in which establishing a connection with a trusted adult (Ahrens et al., 2008; Collins et al., 2010; Greeson & Bowen, 2008) enhanced overall social well-being, the experiences reported by providers, mentors, and stakeholders in this study demonstrate that the smartphone technology can be seen as a lifeline. One stakeholder stated:

> So many youth, in foster care, experience, um adults telling them, that care, they're there for them, and dah, ta dah, ta dah. But when it comes down to it, for whatever reason, they weren't able to maintain contact with that adult. But with the cell phones, there was a way for them to

> maintain contact with that adult … And if the adult, truly was going to have a healthy relationship with that youth and be there for them, they would always be there for them.

Individuals who conduct care coordination or support youth through therapeutic interventions or a mentoring relationship should consider using smartphones and related software to reinforce these relationships, through electronic messages and communication tools, 'therapeutic homework,' transitional planning, and methods for appropriately extending their support networks.

Future programming and research

In terms of programming, state-of-the-art software and innovative smartphone applications are emerging every day. These advances promise to enhance and support service provider interactions with foster youth. It can be enticing to adopt and use new technology in child welfare practice, but an important lesson learned from this demonstration project is to make sure that the expectations and needs associated with the service match available technological resources.

Moreover, this study led to subsequent research questions that could expand our findings. For example, although some evidence suggests that young people are interested in using mobile technology in the provision of care, we do not fully understand how it can help youth forge healthy relationships and repair damage from years of broken attachments while avoiding harm from access to people or situations for which they may not be ready. Additionally, we need to learn more about how to prevent the straining of ties between youth and their caregivers and providers around their use of technology. Future studies should address the following question: If in fact the use of cellphones enhances normalcy and empowers youth, how does that affect the receptiveness of youth to support and structured services?

Conclusion

Although there were problems with implementation of the phone service, responses of providers suggest that the young people had positive experiences. Based on responses from the focus groups, the use of the smartphone among foster youth also appears to have had a positive effect on their lives. The providers and the other stakeholders perceived that the smartphone device enabled the youth to exhibit initiative (e.g., the youth often initiated contact with individuals within their social support network), sustain contact and consistently respond to others, and appropriately engage interpersonally with desired dialogue and interactions. It was the perception of the providers and stakeholders that the ability to initiate connections, sustain involvement, and engage with appropriate and trusted adults might suggest the burgeoning development of relational competence in the youth.

Overall, stakeholders and providers learned that development of innovative services such as the smartphone should be gradual and well planned. It is important to announce the service, engage all the necessary stakeholders, and spend time on the front end to ensure success. It is important during development to identify the unique issues and needs of youth in foster care and adapt the smartphone service accordingly. Inclusion of

foster youth or former foster youth on the planning team can lend valuable input on these unique issues and needs.

The decision to use new technology in child welfare should be carefully considered. Child welfare jurisdictions should be leery of wholesale changes without first engaging in the careful process of exploring programmatic intent and technical processes and procedures. Important questions about cost to agencies, monitoring procedures, and other administrative issues must not be forgotten. Future research and policy questions should centre on what protections are necessary to ensure that the technology is being used as intended, how access will be monitored, how access and utility costs will be contained, and what other possible unforeseen logistical issues exist. From planning to implementation, it is essential to create a safe space for dialogue and the elevation of relational competence among all participating parties.

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No potential conflict of interest was reported by the authors.

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