
ParentCircle: Helping Single Parents Build a Support Network

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Abstract

Single parents often suffer from financial difficulties, loneliness and a lack of social support. The latter in particular leaves single parents vulnerable to stress, which can lead to the development of psychological disorders such as depression. We created the app, ParentCircle, as a low-cost solution to encourage physical interaction between parents in social spaces, and thus, help them build an effective support network. They can share announcements, chat, and are encouraged to form lasting, real world relationships. ParentCircle also offers parents the ability to join various community groups, which provide information about local news, and events to take part in with their children. It differs from existing products and apps, because it actively encourages and facilitates physical interaction, with the intention of helping single parents build a support network which will ease the various burdens they experience.

Author Keywords

Single parents; isolation; community; app; parents; non-traditional families; offline interaction.

ACM Classification Keywords

H.5.2 User Interfaces (D.2.2, H.1.2, I.3.6): User-centered design. H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.



Figure 1: Affinity mapping main themes, with accompanying quotes from single parents.

Negative themes:

- Lack of time
- Lack of energy
- Financial pressure
- Loneliness
- Lack of support
- People's perceptions of single parenthood

Positive themes

- Pride over child's achievements
- Enjoying spending time with child
- Sense of 'team'

Introduction

We chose single parents as our target user group. We felt they are often overlooked, perhaps because of the multitude of issues they experience. Their position leaves them at various disadvantages, and we wanted to create a solution which would help them participate and engage in life as actively as any non-single parent.

To better understand the problems single parents face, we began by consulting existing literature on the subject. We then conducted an exploratory survey examining the different aspects of life as a single parent.

Literature Review

McLanahan et al. (1981) highlight the idea that stressful life events often take a greater toll on single parents because they have fewer social or personal resources to cope. Single mothers report lower levels of social support and social involvement (Cairney et al., 2003), and these feelings play a significant role in the development of depressive disorders.

In the findings of their interviews with 45 single parents, McLanahan et al. (1981) identified the methods by which single parents successfully adapt. One such method was the establishing of an extended network of new friendships. Having such an extended network can provide emotional support, and other benefits to the single parent, such as share of caregiving. However, many single parents still suffer from feelings of social isolation, suggesting they are unable to easily build such a social support structure for themselves (Kotwal and Prabhakar, 2009).

Exploratory Research

We derived several key themes from our exploratory survey (See Figure 1). What particularly stood out were feelings of loneliness and a perceived lack of social support. Parents who completed the survey described not being able to share care and felt that they were not 'backed up' by a spouse. They also described feelings of loneliness because attention is overwhelmingly taken by care of the child, making it hard to form other relationships. Parents did however highlight the sense of companionship, desire to spend time with, and 'being part of a team' with the child, as a positive.

Furthermore, some of those surveyed mentioned a feeling a sense of judgement or being viewed as 'others' in relation to being a single parent. They stated this made it difficult to make new friends and intimidating to approach typical parent groups.

Existing devices for single parents

Although many devices we looked at are aimed at parents in general, some do address issues faced by single parents in particular. *Parents Nearby* is an app which allows parents to message other parents living in their home area. We felt that whilst this was useful, it did little to encourage an offline interaction that might prove more beneficial for the parent in forming meaningful and lasting relationships. Other apps are also available which are similar in functionality.

We also found several 'smart toys' which kept the child occupied and had educational benefits. We felt this was a potential avenue that could be developed, to address more of the problems specifically faced by single parents.

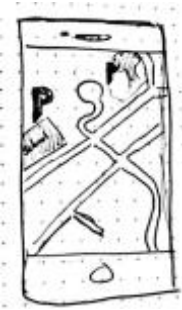


Figure 2: Initial sketch prototype of a map screen for the app. The location-based aspect of the app was the foundation for the rest of the features that we created.



Figure 3: Digital prototype showing basic functionality of the map screen. Initial designs allowed the user to toggle visibility to other parents.

Product Requirements

Based on our research, we derived several key requirements for our product:

- Needs to be relatively low cost
- Should fit into a parent's existing schedule
- Needs to include the child
- Needs to be unique and engaging compared to other products available

Design process

After getting some useful input from single parents, and examining existing products, we moved into our ideation phase. We used the requirements and themes (See Figure 1) derived from our exploratory research to guide us; then consolidated our ideas down to three: A location-based service for community building, a smart toy to help parents communicate with their children and an organizational "hub" for parents to help coordinate activities and chores in a visible, collaborative way with their children.

Gathering feedback and choosing a concept

We contacted single parents by posting adverts on social media and sharing them with our connections. We conducted interviews over the phone, and described our ideas to them to get initial feedback. From there we moved to a process of elimination. The idea of the organizational "hub" was eliminated first. We believed that not only did it represent a product which is already available in a different form, it would've been insensitive to the economic circumstances of our target user group. After considering the two remaining concepts, we agreed not to proceed with the smart toy. Although this idea was well received by parents, we felt

that the cost implications could be a barrier to many single parents.

We decided that a community app would best serve the parent's requirements, and would help facilitate real-world connections. One of the biggest complaints of single parents that we found in our research was the lack of community and support. We felt this idea would be the most effective way for us to lessen that strain on their daily lives, by helping them build a support network, or 'buffer' as Cobb et al. (1976) described. Single parents we interviewed felt that the idea of an app to facilitate connections would help reduce the "fear of rejection" associated with approaching parents, and would help parents who "isolate themselves" due to social anxiety. We felt that by helping the parents become part of a community, they could stand to gain a range of psychosocial advantages, including emotional support, advice of other parents and help with activity coordination and childcare.

We did consider the fact that having a smartphone itself could be a barrier to using this app. However, although low-income families (such as those headed by a single parent) in the UK and the US are less likely to own a smartphone, over 50% of them still do (Pew Research, 2016), indicating that for most single parents, our app could provide immediate benefits.

We chose the name, 'ParentCircle' to signify the protective effects of a social network, the circle of connections around the parent acting as a barrier to the many external stresses they face.



Figure 4: Detailed sketch showing nearby parents and location icons. A 'check in' feature was added to make the app more flexible and make privacy easier to manage.



Figure 5: Clickable prototype showing announcements incorporated into the map. These were added to facilitate interaction and make it easier to find nearby events.

The app: ParentCircle

When using the app, parents have access to a map of their local neighborhood where nearby child-friendly locations are highlighted with the number of parents present at that moment.

Should parents decide to go to a neighborhood spot, aided by location tracking, they are then prompted to optionally check in. This provides them access to parent profiles at the same location. The act of checking in is one of mutual profile sharing in addition to the 'present parents' tally on the map. This provides a level of privacy. 'Checking in' is also intended to indicate that parents are happy to communicate with other parents using the app, thereby reducing fear of rejection that socially anxious single parents may experience.

Each parents profile contains a section about themselves and their interests and is not tied to a specific neighborhood. The profile also contains the age-range and gender of their children as a way for parents to gauge if their children might be similar. Child information is minimal and high-level for privacy reasons, and is entirely optional. As a measure of security, parents can decide the depth of personal information shown in their profile (i.e. Parents can determine how much personal information to show parents in the same area, and parents they have met).

Parents can chat with other parents that have 'checked in' to the same location via the app. They can also share announcements, which are geotagged and appear on other parent's devices. We incorporated this feature in a later stage (See Figure 5) in part as a potential icebreaker to facilitate offline interaction.

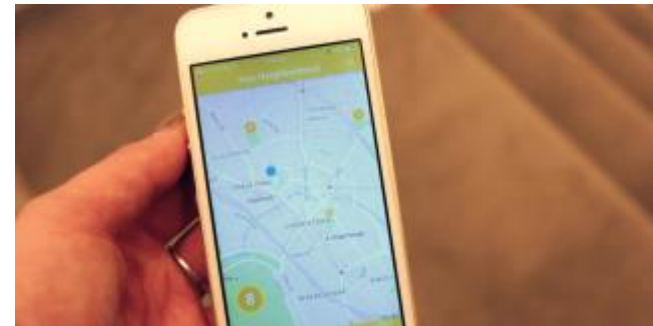


Figure 6: Final prototype of ParentCircle, displaying the number of parents in nearby social spaces or users

These interactions are ephemeral and are lost once the parent leaves the area. This is intended to encourage the parent to pursue more 'real-world' friendships with the other parents. However, the 'I've met' feature can be used; and which does allow some communication between parents for whom contact details may not have been exchanged yet.

When parents meet, they can then indicate that they have 'met' each other by tapping that button on the parent's profile. Parents can then see where these parents have recently checked in, and provide them with details about a space they plan to visit in the future, via a 'Tell (parent x) I am visiting (location y) at (time/date z)' page, where further real world interactions can take place.

Another feature that single parents can make use of is the community notice board, on which local parents can post information that others might find interesting.

"I think this would make me feel less awkward about going up to someone"

"Can anyone just use this app? It makes me worried that people could see where I am"

"I could probably fit this into my schedule anyway – I take the girls to the park a few times a week"

"I like this a lot because I'd be a lot more involved in what's happening in my local area"

"I isolate myself a lot, this might encourage me to put myself out there a bit more"

"I'm not sure about having a section for childcare – I'd really rather it was someone I know and I'm comfortable with"

Figure 7: Quotes from single parents who participated in the think aloud study

Combining these features in a low-cost solution can foster a sense of connection between parents within the community.

The app went through several different design iterations (See Figures 2-6).

Privacy considerations

We appreciated that privacy and security would be a major concern for parents using this app; and as such it was built into the design of the app on a number of levels. The amount of profile information was kept to the parent's discretion; sharing as much or as little as they felt comfortable. Instead of tying profiles to a neighborhood, it was based on current 'Checked-in' location which is only accessible to others at that same location. At the same time, users had control to share their information if and when they chose. Using the 'I have met' feature allows for community vetting of users; and works as the positive counterpart to reporting users who abuse the service. As with other social apps, parents had the control to stop sharing their information with any individual users with which they felt uncomfortable. We used location, community vetting, and allowing parents to be the gatekeepers to their own information as security measures for ParentCircle users.

User testing

We recruited single parents online to test ParentCircle. We used the think aloud technique (Fonteyn, Kuipers and Grobe, 1993) to gain rich, qualitative insight into their feelings whilst using our product.

We chose this method because it would provide detailed insight with a relatively small group of users, and could be easily adapted. We chose a semi-structured interview aimed at ask parents key questions relevant to their journey as they clicked through our prototype, while allowing for parents to discuss their likes and concerns; to gain additional insights.

Some of these questions included:

- Are you comfortable with the information displayed on your profile?
- Do you feel your privacy is adequately protected?
- Would the app make you feel more comfortable approaching parents?

Implications of testing

Single parents we tested responded positively to the app. They appreciated that it made meeting other parents easier, but also encouraged real world interaction. We also uncovered a number of usability problems, which, were we to launch the product fully, we would aim to fix.

Privacy and security were not significant concerns for parents that we tested. Parents liked the control we gave them with regards to profile sharing via the 'check-in' mechanism. We did, however, appreciate that there were still some concerns, which would likely surface further with a larger group of test users. To allow for more control, we created a 'privacy settings' page (see **Figure 8**). For future iterations of the prototype, we would want to include some sort of verification system for members using the app. This

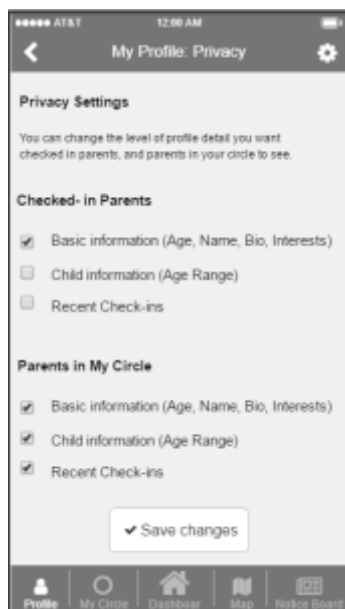


Figure 8: A privacy settings page, added as a result of user testing.

would provide parents with reassurance that other parents in a space were genuine.

Parents found the noticeboard useful as a feature to further enhance the community aspects of the app. However, we would need to do more testing to better understand the categories to include.

Discussion

ParentCircle brings parents together by encouraging offline interaction in social spaces, using a cost-effective solution in the form of an app. We wanted to help single parents build a support network, which could act to guard them from life stresses and provide help when they need it.

It became clear to us through our research and literature review that a lack of social involvement and support was a prime culprit for many of the negative emotions experienced by single parents. Accordingly, we created a solution which aims to remedy this in a novel way.

During our user testing, we found that parents responded positively to the app, however, many questions and avenues for improvement remain. We would like to test the app 'in the wild'. In particular, we would want to test how comfortable parents would feel approaching and talking to strangers, and whether the techniques we have used in the app to mitigate discomfort associated with this are effective. Time constraints meant we could not conduct a study of this kind. A realistic test of our approach would be difficult; in order to truly understand the value of our approaches in mitigating social discomfort and privacy concerns, we would need to beta test the app with real

users (as opposed to using testers approaching other testers, which would bear little resemblance to the real-world use of the app and the accompanying sense of community).

A possible limitation of our product is that of privacy. Whilst we have tried to provide this through the check-in process, and the privacy page we added following testing, we may need additional safeguards in place to protect parents using the app, who may feel uncertain about using it. With more time, this is an aspect we would have tested much more thoroughly, given its overall importance.

We were pleasantly surprised that the individualized way which we presented profiles made it appealing to other groups, such as LGBT parents and fathers on paternity leave, as it simply showed them as a 'parent' rather than a part of a couple. The latter in particular have very few similar products available to them, as many solutions are focused mainly on mothers.

Ultimately, we think ParentCircle is a positive step toward encouraging the development of a protective support network, or 'Circle' for single parents who face too many pressures and demands, with not enough support.

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References

1. Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300–314.
2. Kotwal, N., & Prabhakar, B. (2009). Problems Faced by Single Mothers. *Kamla-Raj*, 21(3), 197–204.
3. McLanahan, S. S., Wedemeyer, N. V., & Adelberg, T. (1981). Network Structure , Social Support , and Psychological Well-Being in the Single-Parent Family, 43(3), 601–612.
4. Richards, L. N., Schmiede, C. J., Richards, L. N., & Schmiede, C. (1993). Problems and Strengths of Single-Parent Families : Implications for Practice and Policy, 42(3), 277–285.
5. Cairney, J., Boyle, M., Offord, D. R., & Racine, Y. (2003). Stress, social support and depression in single and married mothers. *Social Psychiatry and Psychiatric Epidemiology*, 38(8)
6. Fonteyn, M. E., Kuipers, B., & Grobe, S. J. (1993). A description of think aloud method and protocol analysis. *Qualitative Health Research*, 4(3), 430–441.
7. Poushter, J. (2016). Smartphone Ownership and Internet Usage Continues to Climb in Emerging Economies. *Pew Research Center*, 1–5. Retrieved from <http://www.pewglobal.org/2016/02/22/smartphone-ownership-and-internet-usage-continues-to-climb-in-emerging-economies/>