



Enabling Digital Parenting Interventions to Promote Empathic Partnerships among Parents, Educators, and Adolescents Targeting School Refusal

Anna Smout
School of Psychological Sciences,
Turner Institute for Brain and Mental
Health, Monash University,
Melbourne, Australia
anna.smout@monash.edu

Glenn Melvin
School of Psychology, Deakin
University, Burwood, Australia
glenn.melvin@deakin.edu.au

Mairead Claire
Cardamone-Breen
School of Psychological Sciences,
Turner Institute for Brain and Mental
Health, Monash University,
Melbourne, Australia
mairead.cardamone-
breen@monash.edu

Dharshani Tharanga
Chandrasekara
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
dharshani.chandrasekara1@monash.edu

Joshua Paolo Seguin
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
joshua.seguin@monash.edu

Tom Bartindale
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
tom.bartindale@monash.edu

Marie B H Yap
School of Psychological Sciences,
Turner Institute for Brain and Mental
Health, Monash University,
Melbourne, Australia
marie.yap@monash.edu

Ling Wu
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
Ling.wu@monash.edu

Patrick Olivier
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
Patrick.olivier@monash.edu

Roisin Mcnaney
Action Lab, Department of
Human-Centred Computing, Monash
University, Melbourne, Australia
roisin.mcnaney@monash.edu

ABSTRACT

School refusal is a complex issue which typically develops in adolescence, often in the context of anxiety and depressive disorders. While parents and educators play a critical role in supporting these adolescents, they need guidance to work together to overcome the problem. Our study explores how technology can be designed to help parents and educators work together in supporting adolescents who refuse school. We first conducted 14 interviews with parents which highlighted that empathic understanding and communication between parents and the educators is key to supporting

adolescents with school refusal. Subsequently, we conducted co-design workshops with three parents, three adolescents and five educators. Our workshop findings show that reactive and problem-focused communication can undermine trust-building and progress towards supporting the adolescent. Drawing on these findings, we formulate design implications that can enable empathic parent-adolescent-educator partnerships, provide holistic support for parents, and facilitate individual tailoring for diverse parent-adolescent journeys.

CCS CONCEPTS

• **Human-centered computing** → Human computer interaction (HCI); Empirical studies in HCI.

KEYWORDS

Empathy, Adolescent depression and anxiety, School refusal, Co-design, Empirical study, Empathic partnerships



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1 INTRODUCTION

The world is gradually returning to ‘normal’, with countries opening up as the prevalence of COVID-19 declines. However, the detrimental impact of the pandemic on youth mental health is likely to continue. Although schools are returning to teaching in face-to-face settings, research shows that some adolescents continue to struggle with COVID-19-related mental health concerns [44]. In particular, recent studies show that adolescent depression, anxiety and sleep problems, which are known risk factors for school refusal, have increased significantly following COVID-19 lockdowns [44, 46]. Though current rates of school refusal are unknown, research posits that rates have increased in the context of repeated school closures throughout the pandemic. This is thought to be due to prolonged periods spent away from the school environment, subsequent anxiety upon return, and reduction in social skills, as well as population-level increases in anxiety and stress, and reduced access to usual support systems [19].

School refusal is a complex issue that causes significant disruption at the individual, family, and school level. School refusal is defined as persistent difficulty attending school precipitated by significant emotional distress associated with attendance [4]. School refusal usually involves the student remaining home despite parental efforts to enforce attendance; thus non-attendance is overt [5]. Furthermore, non-attendance typically occurs in the absence of antisocial behavior beyond efforts to remain home [5]. A cohesive, team-based response from parents and education providers is the recommended treatment approach [17, 24]. However, such a response is rarely operationalized in ways that empower either party to achieve this. Even though subdomains within Human-Computer Interaction (HCI) have conducted a wealth of research engaging with adolescents, educators and families, there are only a limited number of psychology studies within HCI that have explored how partnerships among parents, schools and adolescents can be leveraged to support adolescents who refuse school. Indeed, past research has shown that digital technology can facilitate the establishment and maintenance of positive working relationships between parents and educators. For example, Slovak et al. [51] examined how technology can be utilized to facilitate social-emotional learning of children in both home and school settings by bridging the gap between the ways educators and parents teach social and emotional skills to children.

As parents or caregivers are the primary conduit between family and school systems, their empowerment to coordinate a cohesive family-school response to adolescent school refusal holds particular promise [59, 60]. As such, our study sought to answer the following research questions (RQs):

RQ1: How can we empower parents to build school-family partnerships in support of their adolescent who refuses school, in ways that are acceptable to parents, adolescents, and the education sector?

RQ2: How can digital parenting interventions support the development and maintenance of school-family partnerships, in the context of supporting an adolescent who is refusing school?

This study aims to address these questions in two ways. First, we operationalize ideal family-school partnerships and corresponding barriers and enablers to their establishment, from the perspectives of parents, education sector experts, and young people with lived experience of school refusal. We then propose a series of design implications that should be considered when developing digital parenting interventions to facilitate effective and empathic partnerships (the identified qualities of ideal school-family partnerships) among parents, educators, and adolescents where the adolescent is refusing school.

We designed our study in two phases. Phase 1 of our research activities was situated in the context of a study to enhance an existing digital parenting intervention to better support parents of adolescents who experience school refusal in the context of anxiety and/or depression. The existing intervention, known as Partners in Parenting-Plus (PiP+; formerly known as the Therapist-Assisted Online Parenting Strategies Program (TOPS; [18]), is the selected digital parenting intervention of this study. PiP+ was designed to empower parents to respond to clinical-level depression and/or anxiety disorders in their adolescent. In Phase 1, we aimed to understand what adaptations were required to meet the needs of parents who i) received the original PiP+ program during a pilot trial [30], and ii) reported school refusal in their adolescent during the trial. In Phase 2, we built on the findings of Phase 1 to explore how the perspectives of parents, educators and adolescents could be integrated to inform the development of effective and empathic partnerships in addressing school refusal. We adopted a co-design approach in Phase 2, to ensure that we identified design considerations for digital parenting interventions from all stakeholders. The contributions of our study are multifold: first, through the adoption of qualitative methods, combining interviews and co-design workshops, we build a strong case for encouraging empathic partnerships among parents, educators, and adolescents as a core mechanism of addressing school refusal. Second, by conducting co-design workshops with adolescents, we show how young people’s perspectives can be integrated in building empathic partnerships through digital parenting interventions. Further, our findings and design implications inform HCI research and practice on digital parenting interventions by considering how empathy can be embedded in digital interventions to foster parent-educator-adolescent partnerships.

We present our work as follows. In Section 2, we first discuss past research in school refusal, including the relationship between school refusal and adolescent mental health. We also highlight existing solutions for school refusal, indicating the importance of empowering parents to support their adolescent, and the need to form partnerships between parents and educators. In Section 3, we provide the context of the study by introducing the intervention (PiP+) which is the focus of our research. Section 4 and 5 provide a detailed account of the methodology and findings of Phase 1 and Phase 2 of our study. Finally, the discussion in Section 6 presents

design implications for promoting empathic partnerships between families and educators in support of adolescents. We conclude our paper by highlighting the key insights of our study, limitations, and potential future work.

2 RELATED WORK

2.1 Problem Landscape: School Refusal and Mental Health

Refusal to attend school can be caused by a number of factors operating at different levels, including individual, school and family levels. Associated short and long-term sequelae include increased risk of school drop-out, poorer academic performance, disrupted socio-emotional development, peer and family relationship difficulties, reduced vocational and occupational opportunities and increased risk for mental disorders [14, 15, 31]. School refusal may appear at any point during primary or secondary-level education [31] but typically emerges during the first two years of high school [39]. Comorbid mental disorders, especially anxiety and depressive disorders, are prevalent among school refusing populations [14, 28, 29, 39]. Classification systems of psychiatric disorders such as the Diagnostic and Statistical Manual of Mental Disorders [DSM-5; [2]] do not consider school refusal a distinct diagnostic entity. Instead, clinical manifestations of school refusal are commonly aligned with one of three primary diagnostic profiles: separation anxiety disorder, phobic anxiety, and co-occurring anxiety and depressive disorders [31]. Though a temporal quandary persists with regard to the onset and development of school refusal and anxiety and depressive disorders [31], their co-occurrence poses a significant challenge for successful treatment and is associated with severe, ongoing impairment [15, 26, 43].

2.2 Rethinking the Existing Solutions for School Refusal: Empowering Parents

Presently, cognitive behavioral therapy (CBT) is the most extensively evaluated evidence-based treatment for school refusal [38]. Randomized-controlled trials (RCTs) evaluating the efficacy of CBT for school refusal, though few, provide support for its effectiveness in improving school attendance and reducing associated emotional symptoms [32, 35, 40]. Pertinently, however, significant proportions of adolescents do not respond to treatment [38] and where improvements following CBT are observed, they are often limited; for example, attendance may significantly increase but not to the extent that minimum attendance requirements are satisfied [26, 40]. Such findings reflect: i) the complex developmental needs and challenges of adolescence that impede the efficacy of CBT for this population more broadly [26]; ii) the influence of factors outside the individual that underpin/maintain school refusal problems and influence treatment outcomes [23, 25, 38]; and iii) the need for innovative, evidence-based interventions that account for these issues [40].

Though the majority of interventions targeting school refusal or absenteeism include parent components [e.g., [26, 54], they primarily target the adolescent, meaning parental intervention and support requires adolescent participation. Additionally, existing

interventions are largely CBT-based [38] and delivered in a face-to-face format, thus are time and resource intensive. Parents face a number of barriers to participation in face-to-face interventions, including scheduling conflicts, logistical issues (e.g., time constraints, transport, childcare) and privacy concerns [22, 41]. Hence, there remains a strong need for an effective intervention designed to meet the needs of parents of adolescents who are refusing school that overcomes the aforementioned barriers to engagement.

Online delivery of parenting interventions has been found to be widely acceptable to parents in Australia and internationally, including among families living with adversities and underserved populations [8, 36, 42]. Moreover, online delivery has been identified as parents' preferred way of receiving parenting support [36, 42], and outcomes of digital parenting interventions have been found to be at par with those delivered face-to-face [3, 16]. As such, the empowerment of parents to respond to the issue of school refusal through a digital parenting intervention has good potential to be both acceptable and efficacious.

2.3 Designing for Adolescent Mental Health and Forming Partnerships between Parents and Educators

Designing resources and supports for adolescent mental health is not a new concept for HCI. Within the sub-domain of interaction design, researchers have introduced a multitude of approaches to promote adolescent mental health including: designing games that are adaptable for adolescents with the support of mental health professionals [12]; identifying design considerations for developing online self-screening tools which act as a gateway to further help-seeking for adolescents [34]; and reflecting on developing meaningful experiences for adolescents through the mediation of technology during difficult circumstances (e.g., COVID-19) [49]. HCI research also focuses on incorporating parent and educator support in promoting child and adolescent health. For example, Shin et al. [50] introduced a collaborative mobile alternative communication system, "TalkingBoogie", for caregivers (e.g., parents and teachers) of children with communication disorders to collaborate with the mutual goal of improving the communication skills of non-verbal children. The authors highlight the importance of consensus among caregivers in developing strategies to help non-verbal children to communicate effectively. Shin et al.'s [50] study further highlights the benefit of building partnerships and strengthening cohesion among stakeholders to ensure holistic support for children. Similarly, Marcu et al. [37] explored the possibility of developing behavioral interventions for children by leveraging family-school collaborations, and Wong-Villacres et al. [55] focused on designing parent-school communication technologies to engage parents proactively in supporting their children.

These past studies also demonstrate that when considering adolescent mental health, promoting partnerships between parents and educators can be challenging [37, 50, 55]. We also observed that past research has not adequately captured how the perspectives of adolescents, parents and educators can be combined and interpreted collectively in supporting adolescent mental health. In fact, most of the past studies collected data from these target groups

individually or excluded the adolescent perspective [37, 55]. However, if we consider the concept of “situated knowledges”, Haraway [21] claims that researchers should aim to uncover and translate the knowledge bases of different stakeholders of a given context to get closer to objectivity [21, 55].

If we are to follow a holistic approach in addressing school refusal through the mediation of digital parenting interventions, we need to consider the different perspectives of parents, educators, and adolescents, who have unequal power relations when making decisions about responding to school refusal. Therefore, through our study, we not only wanted to identify the design implications for promoting effective partnerships among parents and educators, but also to incorporate adolescents’ views in developing these design implications.

In summary, in the context of school refusal, parents represent the primary conduit between school and family systems and are thus best placed to initiate and maintain school-family partnerships. Taken together with the strong evidence for the acceptability and efficacy of delivering parenting support via online mediums, we situate our area of inquiry within the context of digital parenting interventions to leverage existing acceptable mediums and enhance them by integrating multiple stakeholder perspectives.

3 CONTEXT

Partners in Parenting-Plus (PiP+), the selected digital parenting intervention of focus in our study, is Level 4 of the multi-level Partners in Parenting (PiP) digital parenting intervention, designed to support parents to prevent or reduce the impact of depression and anxiety disorders in adolescents. The increasing levels of the intervention have been developed to correspond to increasing degrees of adolescent risk and decreasing levels of parent competencies and parenting self-efficacy. PiP Level 1 (minimal intervention) comprises a set of freely accessible online parenting guidelines [48], which is a universal ‘toolkit’ of evidence-based, expert-endorsed parenting strategies for the prevention of depression and anxiety disorders in adolescents [57]. PiP Level 2 (brief intervention) comprises a single-session psychoeducation online intervention [10]. At Level 2, parents are asked to complete the Parenting to Reduce Adolescent Depression and Anxiety Scale (PRADAS; [9]); a self-assessment scale of the concordance between current parenting practices and the nine domains of parenting addressed in the Guidelines. Parents are then provided with an individually tailored report outlining their strengths and areas for improvement based on their responses to the PRADAS.

At PiP Level 3, in addition to the feedback report, parents are recommended a series of self-led online modules designed to support them in the implementation of their individualized recommendations [58]. Up to nine modules are recommended for completion based on parents’ responses to the PRADAS, though parents have the opportunity to add or remove modules to their preference and are provided access to all modules after completing those allocated. The preventive effects of PiP Level 2 and Level 3 have been evaluated in two RCTs among community samples of parent-adolescent dyads [10, 56, 58].

PiP Levels 1 to 3 were designed to provide self-led support for parents of adolescents who do not yet have clinical-level mood

or anxiety disorders, including those whose adolescents may be at elevated risk or showing early signs of disorder. The selected digital parenting intervention in this study, PiP+ (Level 4), sees the resources of Levels 1 to 3 of PiP program combined with interpersonal coaching support, provided to parents via videoconference as an adjunct to any specialized clinical support the adolescent is receiving for their mental health difficulties. The acceptability and usefulness of the PiP+ program has been established [18], and a pilot trial showed that it improved self-reported parenting behaviors, parental self-efficacy, parent distress, parent-adolescent attachment, and family functioning in parents of adolescents being treated for anxiety disorders and/or depression [30].

Although not originally designed for school refusal, in light of the considerable proportion of school-refusing adolescents who experience co-occurring depression or anxiety disorders [14, 39], we identified that the PiP+ program is ideal for adaptation to meet the needs of parents with school-refusing adolescents. Overlap exists among modifiable parenting factors associated with adolescent depression and anxiety disorders, and those factors related to school refusal problems (e.g., parent mental health challenges, parent over-protection) [11, 60]. Additionally, the online, tailorable modality of the PiP+ program increases accessibility, autonomy, and flexibility for parents without compromising the benefits of interpersonal support. Considering the high relevance of the PiP+ program to the purpose of our study, which is to examine the importance of establishing effective and empathic partnerships among parents, educators, and adolescents through digital parenting interventions, we decided to scope the context of our study specifically to the PiP+ program.

4 METHODOLOGY AND FINDINGS: PHASE ONE

4.1 Study Design and Procedure

In Phase 1, we conducted a series of semi-structured interviews. After obtaining ethics approval to recruit participants who were users of the selected digital parenting intervention, we invited 23 parents who had reported school refusal in their adolescent during completion of the original PiP+ program to participate in interviews, following an iterative purposive sampling approach. This approach was used to ensure the sample was representative across the following three characteristics: 1) severity of school refusal experienced during the original PiP+ trial (mild/moderate vs. moderate/severe; ascertained qualitatively by reviewing recorded PiP+ coaching sessions, in consultation with a senior clinical psychologist with expertise in school refusal); 2) parent improvement in their concordance of parenting practices with a set of evidence-based parenting guidelines (primary outcome) of the original trial ([9]; improvement or no improvement in concordance scores) and 3) adolescent-report anxiety scores as measured by the Spence Children’s Anxiety Scale (scores categorized categorically as above or below the clinical threshold) [45, 53]. Of those invited, 14 parents consented to participate. All participating parents were female, ranged in age from 41-53 years, and resided in Australia. Ten (71%) of their adolescents were female, and the remaining 4 (29%) were male. It was intended that program engagement (percentage of completed vs. allocated PiP+ online modules) would be included in

the purposive sampling approach, however this variable was not informative given only two parents had imperfect engagement scores. The variables were selected because they were expected to reflect a) the participant's experience with the PiP+ program, and b) how the PiP+ program influenced parent confidence to make changes to their parenting, if at all. Ensuring variance of the sample across these key variables was intended to increase the generalizability of the adaptations made to the program based on the views the parents shared.

The aims of the interviews were to 1) understand the needs of parents of school-refusing adolescents who have accessed a digital parenting intervention, and 2) explore how the selected intervention could be adapted to better meet the challenges faced by them. Each parent attended two rounds of interviews, with each interview lasting 40 to 60 minutes. In the first round of interviews, we aimed to understand and characterize the nature and severity of the adolescent's school refusal. In the second round of interviews, the parents shared their specific experience with PiP+ and its usefulness in relation to obtaining required skills and knowledge in supporting their adolescent. Our interview protocol consisted of questions about how the original version of PiP+ had helped parents manage their adolescent's school refusal, what program content and features were useful or missing in the context of school refusal, how a PiP+ coach could best support them in parenting an adolescent who is refusing school, and when and how school-refusal specific content should be delivered.

4.2 Analysis of Data

We adopted Braun and Clarke's reflexive thematic analysis approach [7] to analyze the interview data. All transcribed data were analyzed using Nvivo software for qualitative analysis. Within reflexive qualitative analysis, we analyzed data with an inductive orientation as the purpose of the interviews was to explore the needs of parents when dealing with school refusal. We then followed the standard six steps of conducting a reflexive thematic analysis: (i) familiarizing ourselves with data by reading the transcripts multiple times; (ii) iterative coding of data by being attentive to the core needs highlighted by parents in relation to school refusal; (iii) generating the initial themes; (iv) reviewing the themes iteratively; (v) refining and naming the themes to develop a holistic story; and (vi) writing up the findings by mapping the finalized themes with the overarching aim of our study [6, 7].

4.3 Findings

Based on the parents' experience parenting their adolescent with school refusal, and their feedback about the PiP+ program, we identified four common themes: (i) working together, (ii) communicating the difficulties experienced by adolescents and parents, (iii) agency for empowered decision making, and (iv) design features to guide parents in supporting their adolescent. These interview findings shaped the co-design workshop activities, which focused on operationalizing ideal school-family partnerships that digital parenting interventions could facilitate.

4.3.1 Working Together with Educators and Adolescents. Similar to past studies that have identified difficulties in bringing parents and educators together in supporting children [36, 49], interview

participants discussed their difficulties approaching educators in times of need. Although parents knew that working together with educators in responding to their adolescents' school refusal was crucial, they did not know *how* or *when* to initiate communication with schools. Particularly, when establishing partnerships with educators, parents mentioned that they lacked confidence in approaching school staff. One reason for this is pre-existing assumptions among parents about the negative effect it may have on student-teacher relationships in the school environment. However, parents were also cognizant of educators' time constraints and the challenging nature of their jobs. As such, parents did not know when they should reach out and what information was important to share with educators. These findings suggest that parents need guidance and structure when establishing partnerships with educators to achieve the common goal of supporting their adolescent.

4.3.2 Supporting Parents to Understand Their Adolescent's Experience and Reduce Self-Blame. Another challenge shared by parents was the difficulty in understanding the challenges faced by adolescents that underpinned their difficulties with attending school. Based on the responses of some parents, it was evident that adolescents struggled to communicate to parents the reasons behind their school refusal. Not being able to understand the struggles of their adolescent also meant that parents largely blamed themselves for the difficulties their adolescent was experiencing. Therefore, parents would benefit from guidance from digital parenting interventions not only to understand their adolescent, but also to manage their own stress and self-blame. Indeed, parents indicated that the existing structure of PiP+ helped them to reduce self-blame and focus on self-care. This was attributed to the non-judgmental stance and support from their coach, paired with their receipt of psychoeducation about how anxiety and depressive disorders develop and are maintained, through informative online modules. Thus, when designing digital parenting interventions to address adolescent school refusal, attention should be paid to not only provide parenting strategies but also strategies that help parents reduce their own anxiety and self-blame.

4.3.3 Need for Agency in Decision-Making. As highlighted in section 3 (context), the first part of the PiP+ program is a parenting self-assessment survey (PRADAS) which is used to recommend specific modules based on identified areas for development. Parents are able to further tailor their program by selecting or de-selecting other modules. Parents emphasized the importance of having agency in decisions about the digital parenting intervention, for example, in choosing specific topics to complete based on their own needs and family situation. This was particularly important to parents in the context of school refusal, as developing a shared understanding of the unique challenges each adolescent and family are facing is considered integral to addressing the underlying cause of the school refusal. Furthermore, this finding highlights the necessity for other digital parenting interventions to consider providing customized or personalized support for parents as a means of giving them agency about what they want to focus on through the intervention.

4.3.4 Means of Providing Guidance through Digital Parenting Interventions. As we conducted interviews with parents who had completed PiP+, we examined ways in which similar interventions

could provide guidance for parents dealing with adolescent school refusal. The feedback from parents can be grouped into four factors: (i) program content, (ii) program structure, (iii) learning and engagement, and (iv) interpersonal support. In terms of program content, providing information about alternatives to full-time, face-to-face learning pathways (such as distance/virtual education or flexible learning settings) was emphasized by parents. Regarding program structure, parents highlighted the importance of incorporating school-refusal related information throughout PiP+, rather than limiting it to specific modules. When considering learning and engagement, parents discussed the usefulness of topic summaries (separate to the online modules and coaching sessions) they could easily refer back to, and activities which enhance engagement and consolidation of learning such as quizzes and case studies. Finally, parents emphasized a desire to connect with similar others (peer support) and experts (expert advice) as a part of their learning through digital interventions. Indeed, having relatable content based on scientific evidence was only one aspect of the program that parents valued. Many parents repeatedly discussed that the PiP+ coach as the most valuable component of the program for them. In particular, parents valued: (1) having someone knowledgeable, empathic, and non-judgmental to talk through problems with and someone who can help them make sense of their own/their teen's experiences; (2) having the coach tailor the program content to their context; (3) increasing sense of accountability as a result of having coach support; (4) receiving encouragement to persevere; (5) and receiving access to expert advice while also having their own strengths and expertise as parents affirmed and respected. Parents also mentioned that they had attempted to obtain peer support (which was not available as part of PiP+) by joining parent groups available on social media.

5 METHODOLOGY AND FINDINGS: PHASE TWO

5.1 Study Design and Procedure

In the second phase of the study, we broadened our target groups to include parents, education experts, and young people with lived experience of school refusal to integrate different perspectives of stakeholders involved in working with adolescent school refusal. Inspired by Haraway's concept of situated knowledges [21], we realized that integrating the knowledge and experiences of parents, educators, and young people (which can be contradictory and partial) would enable us to develop design implications that are meaningful, particularly in terms of achieving common goals through connection and the building of community in the context of adolescent school refusal. Further, even though we selected PiP+ as the study context to scope our work in Phase one, we designed the workshop activities (Phase two) to ensure that we derived data that have broader implications for any digital parenting intervention targeting adolescent mental health.

A range of strategies were employed to recruit members of each stakeholder group. Parent stakeholders (N = 3) comprised two parents from Phase 1 who expressed interest in partnering with the research team for Phase 2, and 1 new parent stakeholder who was recruited via snowballing. Parent stakeholders were all female (100%), parents of adolescents residing in Australia, aged (52-54 years),

although one parent declined to provide their age. Their adolescents had attended distance education for one year or more before returning to face-to-face learning (n = 2) or had disengaged from school altogether (n=1) due to school refusal. Education sector stakeholders were recruited via email to professional networks of the research team, and snowballing. They comprised of teachers (n = 2), and area coordinators and wellbeing officers within a government-funded school re-engagement program (n = 3)), all with extensive experience working with families of students who refused school. Adolescent stakeholders (N = 3) with prior lived experience of school refusal were recruited via social media posts, snowballing, and personal networks of members of the research team. Adolescent stakeholders (2 female, 1 male) ranged in age from 16-20 years. Two adolescents had attended distance education for one year or more due to school refusal, one of whom resumed face-to-face learning. One adolescent had experienced intermittent periods of refusing partial days of school, but ultimately remained engaged in face-to-face learning. One adolescent stakeholder was the child of one parent stakeholder. Otherwise, to the knowledge of the research team, no stakeholders held additional relationships with one another. The decision was made to run workshops separately for each stakeholder group to ensure participants felt safe to provide their views freely, and perceived power imbalances between stakeholders did not unduly bias or limit the information shared.

All co-design workshops were approximately 90 minutes in duration and were conducted online using Zoom. We designed workshop activities mainly using school refusal case-vignettes [27, 52] and the concept of "magic machine" [1] (see Figure 1). The case vignettes were created to facilitate perspective taking (to experientially build empathy for the experiences of other parties) and empower participants in terms of decision making [27, 52]. Second, inspired by "magic machine" workshops in HCI, we also included prompts in the workshop activities to encourage participants to think of "magic technology" that would help their situation [1]. The "Magic machine" exercise thus helped workshop participants to think of creative ways technology, and thus digital parenting interventions, can be utilized to address issues related to school refusal.

The first co-design workshop was conducted with parent stakeholders. This workshop consisted of three activities which used school-refusal case vignettes. The workshop activities focused on examining four aspects from the parent perspective of supporting an adolescent experiencing school refusal: (i) the barriers and enablers of working together with educators, (ii) qualities of ideal school-family partnerships, (iii) what role each party should play in supporting the adolescent, and what they would need to achieve this, and (iv) the role of technology in supporting parents, educators and adolescents to this end.

Next, we conducted one co-design workshop with education sector stakeholders. This workshop utilized the same case vignettes used in the parent workshop. The activities of the workshop were designed to build on findings from the parent co-design workshops. Three key factors were explored: (i) the qualities of ideal school-family partnerships from the perspective of the educators, (ii) steps parents can take to build empathic and effective partnerships with schools in supporting their adolescents, and (iii) how technology



Figure 1: An illustration of the use of the ‘Magic Machine’ [left] and case-vignettes [right] in co-design workshop activities

could be leveraged to support empathic and effective school-family partnerships.

Finally, we conducted three separate individual co-design workshops with adolescent stakeholders. The workshops were completed one-on-one with the facilitator due to participant preference. The focus of these workshops was to examine the most helpful and acceptable ways for parents and educators to work together in supporting the adolescent. The workshop activities were based on the same case vignettes created around trust-building, emotion co-regulation, and autonomy-promotion, which were identified as key challenge points by both parents and educators. Further, engaging with young people after conducting workshops with parents and educators enabled us to explore whether adolescents are likely to be receptive to the challenges, roles, and suggestions identified by parents and educators.

5.2 Analysis of Data

We integrated the data of all workshops and the observation notes of the facilitators to examine how different perspectives of each participant group could be mapped together to promote empathic partnerships. Thus, the needs and challenges shared by parents, educators, and adolescents were combined with the strategies they suggested in providing the best support for adolescents. We used affinity mapping to make sense of the data gathered through the workshops and to organize data into common themes. The workshop data was also analyzed iteratively by visiting the data multiple times.

5.3 Findings

While our Phase 1 interview findings highlighted the challenges experienced by parents in supporting their adolescents, the workshops were designed to identify solutions from multiple perspectives (i.e., situated knowledges among different stakeholders). Specifically, the

perspective-taking exercises facilitated through the case vignettes revealed several factors that were identified by stakeholders as important when designing parenting interventions to address adolescent school refusal. These factors are discussed below.

5.3.1 From Reactive to Proactive Communication. Our findings indicated that it is important for parents to provide a detailed account of their adolescent’s experience of school refusal to school staff, and for school staff to distinguish the problem from other types of school attendance problems such as truancy (i.e., non-attendance without parent’s knowledge or permission) and respond with appropriate school-level supports. However, for this to occur, lines of communication must be open between parents and adolescents, parents and school staff, and school staff and adolescents. Throughout our workshops, parents, educators, and young people reported having difficulties in initiating communication with each other due to the constraints of their role (school staff), anticipated or experienced judgement/stigma (parents, adolescents), and lack of understanding of the problem (parents, adolescents, school staff). The identified barriers to proactive communication are presented in Table 1.

Based on the experiences shared by all three stakeholders, the existing barriers to initiate open and proactive communication meant that parents, school staff, and adolescents engaged with each other in a reactive rather than proactive manner. This not only limited the opportunity to address the issue early or before it worsens but was also perceived to be detrimental to the mental health of the adolescent.

Additionally, both adolescent and education sector stakeholders raised the benefit of proactive, two-way communication between parents and school staff about positive events, the strengths of the student, progress towards goals, or things unrelated to the school refusal, to strengthen school-family partnerships as follows:

Table 1: Barriers to proactive communication

Target group	Barriers to proactive communication
Parents	<p>Difficulty in understanding adolescent's emotions and experience, and lack of knowledge about the underlying causes of school refusal.</p> <p>Lack of trust in health professionals or school staff who enforce attendance without addressing root causes.</p> <p>Stigma associated with school refusal when reaching out to peers or school staff for support.</p> <p>Lack of knowledge about when or how to reach out to educators to initiate a conversation about school refusal.</p> <p>Lack of population-level awareness about school refusal.</p>
Educators	<p>Lack of knowledge about the student/family's experience (inclusive of school refusal, mental health issues, and challenging contextual circumstances) when this is not communicated in detail by students or parents.</p> <p>Lack of resources, education, and training to support adolescents dealing with school refusal.</p> <p>High workload making it difficult to focus their attention on supporting specific students.</p>
Adolescents	<p>Concern about or experience of being 'judged' by parents and teachers.</p> <p>Concern about being treated as if there is something wrong with them, or as if they are in trouble.</p> <p>Difficulty in understanding their own feelings and expressing them to others.</p>

"...not only reaching out to parents when there's a problem or when there's a challenge but also reaching out just to say hi and get to know them... or to say you know something really great's happened to your young person not just they didn't turn up or there's a problem"- Education sector stakeholder.

"(Open communication) would give teachers more context for how Anjali [adolescent from case vignette] is at home and it would give Priya [parent from case vignette] context about how Anjali is at school so they can build that story and profile of like how Anjali interacts in different environments and what environments she feels most comfortable in." – 20yo adolescent stakeholder.

"...also, just like... more focussed on the improvements but also things that haven't gone too well as well" – 16yo adolescent stakeholder.

Parent and adolescent stakeholders also reflected on the importance of meeting regularly with school staff to allow issues to be raised in a timely manner. These quotes illustrate how by doing so, problems are less likely to compound:

"It gives space for little things to be discussed, and not have them build up larger than they should... often like my episodes of attendance would start off with little issues... it would start off with me struggling with an assignment... then it would all just tailfall (sic) from there..." – 19yo adolescent stakeholder

"[It's important that parents and school staff meet regularly] so they can start putting things in place before it becomes a real problem that's gone too far" – Parent stakeholder

Further, both parents and educators agreed that parents were best placed to initiate communication with educators when they recognize their adolescents may be experiencing difficulties in attending school. Thus, it is important that HCI researchers understand the

barriers to proactive communication and design digital interventions to facilitate proactive engagement and communication by parents, educators and adolescents.

5.3.2 Building a Fuller Picture of the Adolescent's Context and Experience. Overarchingly, all stakeholders agreed that efforts to work together in support of an adolescent who is refusing school are likely to break down unless time is taken by each party to understand the adolescent's school refusal-related experiences, perspectives, and goals related to how to move forward with their education. Central to this idea was building an awareness of the factors contributing to the adolescent's school refusal and interpreting the school refusal as a manifestation of distress which occurs within a broader personal, familial, social, and environmental context. The following quotes illustrate this point:

"Building an understanding, like that's where everything starts right... trying to understand where someone's coming from... building a profile based on experiences and physical health and mental health and emotional health." – 20yo adolescent stakeholder

"We've got to remember not to traumatise our children by forcing them into a situation that they're not comfortable with until we know why, what the reason is they're feeling like that" – Education sector stakeholder

"I think it should be mandatory at all schools... that you know they make more of an effort to understand what's going on with the kids... because everyone's got a different, background and journey and story and, I don't know they just need to understand a bit more of the story to get it right." – Parent stakeholder

Parents and adolescents further reported they felt dismissed and misunderstood when health professionals, school staff or peers encouraged enforcing attendance without comprehending the fuller picture, or the amount of distress the family was contending with. Based on our analysis, the mental health basis of school refusal should be addressed for these target groups in different ways. First,

in the context of school refusal, adolescent participants reflected on how important it was for them to feel understood by the people supporting them before steps were taken to address the problem. A 16-year-old adolescent stakeholder said:

“... If they're [adolescents] not sure about... plans and steps they want to do like not pressuring them into like finding a solution just kind of, listening to their problems rather than trying to find a solution straight away... once they understand her and she feels more comfortable they can start coming up with a plan” – 16yo adolescent stakeholder

Education sector experts also highlighted that they did not always feel confident to address the mental health difficulties of students because they are not trained to do so. However, if parents share the experience of their adolescents with educators, and vice versa, they may better understand the student's difficulties as being mental health driven and direct them to relevant support services known to the school. Overall, stakeholders communicated a clear need for parents to feel empowered to build this fuller picture of their adolescent's experience and communicate this to the people involved in supporting their adolescent's school attendance, in order for an empathic and effective family-school partnership to be established.

5.3.3 Empowerment of Parents as Advocates for the Adolescents. The lack of awareness about school refusal within the general Australian parenting population was cited by parents and school staff as a significant contributor to the disempowerment of parents in advocating for their adolescent's needs in this context. Parent and adolescent stakeholders expressed that their lack of awareness that school refusal 'existed' or could be overcome, culminated in their experiencing shame, self-blame, hopelessness, and a subsequent reluctance/inability to confide in others or ask for help. Parents further believed that the general lack of awareness of the issue contributed to a shared experience of feeling judged by other parents, school staff, or health professionals. The following quote illustrates the significance of this for one parent:

“So for me the hardest thing... this first school that she attended was using judgmental language, to me, when I was navigating uncharted terrain... so to have the outside voice not be judgmental shifts everything.” – Parent stakeholder

Consequently, stakeholders posited that the empowerment of parents as advocates for their adolescent would be enabled by increasing population-level awareness of the issue. In the view of parent stakeholders, doing so would mean more parents and education staff would be aware of supports available, and parents would be more likely to find and connect with other parents with lived experience of caring for an adolescent with school refusal. Overarchingly, parents believed that with increased awareness, the stigma associated with school refusal would reduce, they would feel more empowered and hopeful as advocates, and would be more inclined to communicate proactively with others supporting their adolescent's attendance.

“... the most powerful thing about it for me is that both parents and children know they're not reinventing

the wheel, that this is a known, um situation and that there are strategies to support them” – Parent stakeholder

5.3.4 Need for a Centralized Digital Space that Provides Information, Support, and Connection. In light of the aforementioned lack of awareness of the issue of school refusal, parents emphasized that they had not known where to find reputable school-refusal specific information or support, and thus felt overwhelmed when looking for support for themselves and/or their adolescent. For this reason, the parent participants were of the view that the ideal digital parenting intervention would be a centralized digital space with multiple functionalities, was widely known, and housed all of the different types of supports they desired in one place. The following quotes illustrate these points:

“Like a knowledge database, and a perhaps a forum for suggestions and questions and answers with you know, we talked about mentoring or peer support, so there could be some sort of forum for, parents and teachers to speak to other parents and teachers who've, experienced this... obviously, a database or knowledge base of actual strategies then that you can use, maybe some coaching sessions there may be a list of professionals or other organizations that you can seek support from... a place to connect with other parents who've had these issues and a place for the students to connect with other students who have understood it... so you can speak to someone about it just to kind of, touch base and say hey look I'm really struggling today... is this normal or what did you do in this situation” – Parent stakeholder

“I think it needs to... every single parent and child within every single school needs to know it (the technology) exists, and then how access is navigated is the next question” – Parent stakeholder

Parent and education sector stakeholders were also of the view that the digital parenting intervention should enable two-way information transfer, improve cohesion and planning, and recording of progress and achievements, but most importantly, facilitate connection. Adolescent stakeholders agreed these functions were largely acceptable to them, provided their agreement was sought before information was shared about them.

6 DISCUSSION: DESIGN IMPLICATIONS FOR THE DEVELOPMENT OF EMPATHIC PARTNERSHIPS

6.1 Empathy in Parent-Adolescent-Educator Partnerships

The findings of our study confirmed that parents, educators, and adolescents believe it is important to build and maintain effective and empathic partnerships in order to overcome school refusal. In the context of digital parenting interventions, in which the parent is the active participant, the design of the intervention should foster empathy towards all three stakeholder groups (i.e., parent [self],

adolescent, and educators). Although we acknowledge the availability of many metrics and frameworks on empathy, to design for and evaluate empathy in this context, we adopted Zaki's framework of empathy that focuses on empathy building in adults [61]. This framework identifies three fundamental facets of empathy, based on seminal theories and empirical evidence in human empathy literature [13, 62]: 1) *sharing*, which involves experiences, emotions and personal distress of others; 2) *thinking about* or mentalizing, which involves cognitive empathy and taking the perspective of others; and 3) *caring about*, which involves motivational empathy, empathic concern and compassion [61]. This framework enabled our design to facilitate empathic partnerships where the adolescent's experience is articulated and shared, which then engenders empathic understanding, perspective taking, empathic concern and compassion among adolescents, parents, and educators.

Our findings from both interviews and workshops highlight several important aspects of empathy in this context. We identified that parents, as the mediators between educators and adolescents, often struggle with self-blame related to their adolescents' mental health problems and school refusal. Aligning with findings from past studies [33], parents also described feeling stigmatized in the context of advocating for the needs of their adolescent who is struggling to attend school. To foster empathic partnerships between parents and others, digital parenting interventions should encourage parent self-care (i.e., empathy towards self). Related to this, our findings suggest that parents need to be equipped with knowledge about school refusal, including underlying causes and a strong understanding of the adolescent's experience. This understanding can then help parents to initiate proactive communication with others (e.g., the school).

Our findings from workshops with adolescents also indicated that adolescents want the adults supporting them to get to know them beyond their school refusal difficulties, including understanding contributing factors. Empathic partnerships between parents, educators and adolescents may also include: involving adolescents in decision-making related to school, providing a safe space for conversations and updates about the adolescent's mental health and wellbeing, and destigmatizing the issues faced by the families.

From the perspective of educators, our findings point to the importance of parents sharing details about their adolescent's difficulties and strengths, as well as their family situation, to help build empathy between schools and families. For example, educators spoke about their difficulty in supporting students if they have limited information from parents. Thus, when supporting parents through digital parenting interventions, it is important to consider how the intervention can help build empathy of parents towards educators. This is considered a key component of working together to achieve the common goal of supporting the adolescent.

Overall, when designing digital parenting interventions to promote empathic partnerships, it is crucial that all target groups not only have empathy towards themselves but also towards other stakeholders. The other design considerations we have presented in this section further confirm this need to build empathic partnerships and different means of achieving that.

6.2 Designing for Holistic Support

Our findings also demonstrate the need for parents to be equipped with effective strategies to support their teen to overcome school refusal. This should ideally include holistic support in the form of: (i) establishing a knowledge base, (ii) identifying appropriate actions, and (iii) fostering empathy. For example, parents should be guided to learn more about school refusal (knowledge), how they can communicate and work effectively with their adolescent and educators (actions), and the underlying mental health difficulties contributing to the school refusal, as well as effective ways to work with the adolescent and the school (empathy). Digital parenting interventions provide an opportunity to support parents in all these areas. Particularly, interview and workshop findings indicated that parents often struggle to identify ways to help their adolescent. Therefore, it is crucial that we enable parents to take charge of the decisions they make when their adolescent is refusing to attend school. Table 2 shows potential ways to encourage parents to seek different forms of support through digital parenting interventions, and what types of prompts could be available to support parents to feel empowered to take action and proactively seek help. While these forms of support are not mutually exclusive, they could guide designers to frame the different forms of support that should be offered within the digital parenting interventions.

Designing for holistic support also builds on our workshop findings regarding the need to have a centralized digital space that provides information, different forms of support, and connection. These findings also align with the work of Shin et al. [50] in which the importance of having centralized digital systems for communication among different caregivers such as parents and teachers was indicated. Indeed, centralized digital spaces could be used to support parents to communicate with both adolescents and educators without feeling overwhelmed, as well as to connect with peers with shared lived experience of caring for a school-refusing adolescent. Digital parenting interventions could also be used to support parents, adolescents, and educators to record and share their observations and progress with each other, thereby fostering both open communication and empathy. Fragmentation and overabundance of information has previously been identified as a challenge for parents when interacting with multiple decision makers in relation to their children [55]. Hence, when designing digital parenting interventions, parents are likely to benefit most if they are able to access information, advice, and support all in one central location.

6.3 Enabling Individual Tailoring for Different Parent-Adolescent Journeys

The interview and workshop findings emphasized the need to allow parents to tailor their experience of digital parenting interventions to support their own unique family situation. All three stakeholder groups identified that school refusal is a complex problem with different underlying causes for each individual, hence requiring an individualized response based on the family/adolescent circumstances. Therefore, when designing a digital parenting intervention for this population, it is important to consider how the intervention can meaningfully represent different lived experience perspectives,

Table 2: Forms of support and prompts to obtain holistic support

Forms of support	Prompts
Knowledge	What is ‘school refusal’, and what can I do to understand my child’s feelings better? What steps can I take to make my child heard in the decisions I am going to make together with the school? What should/shouldn’t I do when interacting with my child and the school staff? What information would benefit me at this moment to support my own and my child’s mental health? What are my responsibilities in supporting my child? What are the responsibilities of the school when supporting my child? What help is available to parents of a child who is refusing school? How can I initiate the necessary steps without waiting for other parties to come to me?
Actions	How should I start the conversation with my child? How should I start the conversation with the school? How can I educate the rest of my family in supporting my child? How and when should I incorporate my child’s feedback when reaching out to the school for support? In what ways can I protect the privacy and confidentiality of my child when sharing information with others? How can I have a conversation with my child about their experience in a way that makes them feel psychologically safe?
Empathy	Why is my child experiencing school refusal, depression, and/or anxiety? What is my child’s experience of school refusal, depression, and/or anxiety? Why doesn’t my child feel capable of/comfortable in sharing their experiences with me/my partner/the school? How can I help my child feel safe in sharing their concerns and feelings with me and the school? What are the barriers faced by the school/teachers in supporting my child? How can I help the school help my family?

including supporting all parties to build a ‘full picture’ of the adolescent/family situation, challenges, strengths, and goals.

As such, instead of designing a program to address one specific problem (in this case, school refusal), parents and educators could be prompted to shift from a problem-solving mindset to understanding the forces that shape adolescent development prior to addressing school refusal. Most importantly, when shifting from a problem-solving mindset to supporting and understanding the adolescent’s unique journey, it is also crucial that designers as well as mental health professionals facilitating the intervention recognize that there is no single solution that should be promoted through the intervention.

Relatedly, this implication reinforces the combination of informational and relational components of the existing PiP+ intervention (online modules and coaching sessions, respectively) as being equally integral to the success of the program, from the perspective of parents. Where most parents interviewed in Phase 1 experienced their interactions with their PiP+ coach as the most valuable facet of the program, it is important to note that the nature of the parent-coach relationship would have been fundamentally different if parents had not already received the psychoeducation and behavioral guidance via the online modules. Prior completion of online modules maximized time in the coaching sessions for tailoring content, as well as for two-way information sharing, collaborative reflection and exploration (empathy). Having coach-assisted sessions as an adjunct to psychoeducational intervention content

is therefore one effective method of enabling individual tailoring throughout a digital parenting intervention.

7 CONCLUSION

Studies have repeatedly shown that establishing effective parent-educator partnerships to support children and adolescents can be challenging [46]. Even in the HCI design space, there is limited research that has explored the formation of empathic partnerships among parents, educators, and adolescents, and how these partnerships can be leveraged to address the challenge of school refusal. By conducting a two-phased empirical study with semi-structured interviews and co-design workshops, we highlighted the means through which the perspectives of multiple stakeholders can be integrated and refined to facilitate empathic partnerships through the design of digital parenting interventions. Although the first phase of our study focused on a specific digital parenting intervention (PiP+), the overarching findings inform design implications for other digital interventions targeting families and adolescent mental health. Our co-design workshops that utilized case vignettes and “magic machine” based activities [1], were an effective means of encouraging empathic conversations among different target groups. This also forms a methodological contribution as it shows how co-design workshop activities can be designed for participants to reflect on and empathize with other stakeholders, while minimizing negative judgment of others. Supporting the school attendance of young people requires the involvement of family, school, and health professional stakeholders. Thus, the insights gleaned from

this study may be applied to any such use cases in this context which benefit from a partnership or team-based approach for optimal outcomes.

7.1 Limitations and Future Work

With this research being a preliminary explorative study, we acknowledge a few limitations and point to future directions of research. First, while this intervention targets adolescent school refusal, our design implications for the intervention centered around parents as the direct users. Although we have thoroughly integrated ideas to facilitate parent-adolescent interaction that supports the adolescent, it follows that the impact on the adolescents is indirect. Therefore, future studies could focus on developing variations of, or additions to, the same digital intervention which directly target relevant stakeholders (for example, adolescents or educators). Further, the parent sample in this study was comprised of mothers only, which limits the potential generalizability of the findings. The uptake of parenting programs by fathers is limited in comparison to mothers [47], but evidence to date indicates that paternal and maternal factors have unique and independent associations with adolescent mental health [20] and school refusal [11]. While the involvement of multiple stakeholder groups in this study gave rise to the collection of a rich, multidimensional account of the challenges experienced in the context of school refusal, future research should purposively recruit fathers to incorporate their perspectives and experiences.

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