

Understanding Online Parental Help-Seeking and Help-Giving in Early Childhood:

The Design Challenges of Supporting Complex Parenting Questions

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Early parenting is one of the strongest predictors of child well-being. Online social communities have shown promise in supporting parents across a range of contexts. However, we only have a limited understanding of how posters and commenters interact within a forum, or how well commenter responses can support complex parenting questions, such as attempts to change a child’s behaviour or to apply new parenting approaches. We start addressing this gap by combining an empirical analysis of 1 year of parent posts from an exemplar online forum (Mumsnet) with literature on parenting interventions from psychology. In particular, we examine the types of question parents of 2-5 year olds seek help for around their children’s behaviour, and the challenges with the support that they do (or do not) receive from the Mumsnet community. Combining empirical and theory-driven insights, we outline an ‘information-to-application’ gap that conceptually underpins the difficulties observed, and suggest plausible research directions that could address such design problems.

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1 INTRODUCTION

Parenting can be one of the most rewarding—but also most challenging—life experiences. As children grow, parents are faced with a dizzying array of changing responsibilities and decisions about what parenting practices they want to use (or to avoid) as well as how to use these in ways that feel right for them and their child [74, 77, 129]; all with the view of the longer term goals of supporting their child’s well-being [34, 78]. While parents have access to a wealth of parenting information advice online, e.g., through websites, podcasts, social media, or online fora [40, 49, 85], they still appear to face challenges in both (i) selecting relevant information for being able to apply to their specific contexts [35, 73]; and also (ii) when attempting to apply these tips in daily life [23, 73]. To further complicate matters, what works for one family might not work for another; and in fact the very same phrase that helps calm a child in one situation might lead to a tantrum another time [130].

Psychological literature around parenting interventions showcase this potential complexity of providing parental support and how this changes along the developmental trajectory of a child [61, 111, 141]. Decades of research highlight how much of the parenting difficulties are grounded in the dynamics of parent-child interactions [25, 57, 136], and thus must take into account both the specifics of the situation as well as the social practices that exist in the family [23, 98]. As such, the parenting interventions highlight the importance—and the difficulty of—supporting parents’ ability to apply the general approaches (e.g., ‘be empathic with your child’) to specific instances of parent-child behaviour, as well as attempt to scaffold reflection [33, 109, 122] and further situated support to enable skills acquisition and transfer [1, 26, 27, 133].

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53 However, as is common for many public health interventions, only a small percentage of families has access to existing
54 service provision (e.g., due to the traditional in-person delivery facing challenges of cost, reach, availability).

55 In HCI, much scholarship has focused on how parents are asking for (and receiving) support through online fora
56 [7, 24, 92, 117] as one way of addressing similar issues of access and reach. Recently, the largest body of work has
57 particularly focused on new parents [21, 53, 82, 87, 88], but has also examined how parents sought support during
58 period of social distancing [65], investigated online practices of young parents [58, 120], privacy issues around sharing
59 information and separately, disinhibition with anonymity [24, 115], and the communication practices that parents have
60 through online posting [38]. In these cases, interactions have mostly identified information delivery, decision support, and
61 emotional support as key practices. However, to the best of our knowledge, less is known about how parents seek support
62 for child behaviour-related needs (as an example context of help-seeking for complex problems), and the specific forms
63 of support that are feasible or hindered for complex parenting questions in forum-like interactions. In particular, there has
64 been less focus on understanding original poster and commenter interactions, and how well commenter responses help to
65 address the original poster's needs.

66 In this work, we aim to contribute to addressing these issues by examining the online support received—and given—by
67 parents, in the context of questions related to the parents' perceptions of child dysregulation, for children who are 2-5 years
68 old. We selected this age range as an exemplar case given it being a period of rapid psychological and social change, when
69 children are both socially and developmentally expected to become capable in regulating their emotions and behaviours
70 [55, 112]. Such a profound transformation then leads to changes in parent-child interaction and re-establishes the social
71 practice in the family [67]; as is also indicated by the culturally accepted notion of these years being particularly difficult
72 for parents (with phrases like 'terrible twos' and 'threenagers' widespread). Finally, this developmental stage is associated
73 with a long history of structured parenting programs—mostly non-technological at their core—that predominantly target
74 this age range, offer parents specific skills as applicable to their wider family context [39, 50, 70, 113, 123, 140], and can
75 provide a body of evidence-based parenting practice to draw on in our analysis.

76 As such, our aims are two fold: First, to empirically investigate how parents of 2-5 yo reach out for—and receive—help
77 around their child behavior and their own parenting practice through an exemplar open online forum, Mumsnet (as
78 the largest parenting website in the UK). Second, to combine this empirical data with what is known about parenting
79 interventions in psychology, to critically examine the current affordances of online fora, and, if needed, suggest an agenda
80 for future work in this space.

81 From the empirical perspective, we collected all original posts (i.e., the thread-starting questions) pertaining to 2-5
82 year old that were posted in 2019 to the 'Parenting' sub-forum of Mumsnet (N = 466). Through content analysis, we
83 identified the posts seeking advice regarding the child's behaviour (e.g., tantrums, lack of self/emotional regulation; n=186,
84 i.e., 39% of all posts) and the associated emotional frustration faced by the parent. Finally, we randomly subsampled
85 40% of these threads—reflecting a purposeful sample of posts with varying response rates—to examine the types of
86 support that parents received for child behaviour management from other posters through thematic analysis. The findings
87 show that parents overwhelmingly receive what should be directly applicable advice for seemingly 'solvable problems',
88 alongside emotional support. However, there are substantial difficulties in giving and receiving such instrumental support
89 successfully, as these suggestions are often not directly actionable, but multifaceted and harder to communicate fully
90 within the Mumsnet online forum affordances. This is evidenced by posters seeking clarification about original poster
91 problem, offering additional contextual information, questioning prior poster comments, and reframing their posts; all
92 highlighting the tensions between needs sought and support offered.

105 From a design-agenda setting perspective, we then combine the empirical data with what is known about parenting
106 interventions in psychology, to critically examine the current affordances of online fora and their capability to provide the
107 instrumental support as needed. We highlight the *'information-to-application'* gap that underpins the observed difficulties,
108 emphasising how information delivery alone is—according to psychological theory and our data—unlikely to be sufficient
109 for addressing the parenting challenges that parents bring to the online settings. We then argue why current affordances
110 of online fora might not be suitable to fully resolve the information-to-application gap, and that new interaction design
111 capabilities would be needed if we want to address the needs of receiving the kind of situated, complex support that is
112 required. Finally, to jump-start this research agenda, we outline how work in three related areas of HCI tackles similar
113 challenges (personal informatics, technology-enabled interventions for the home, and traditional parenting courses) and
114 could inspire such novel design solutions in this context too.
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117 In sum, this work contributes to understanding of how interaction design could support complex parenting help-seeking
118 on online fora, highlighting a number of conceptual challenges and opportunity for future designs. By combining both
119 in-depth empirical analysis with a conceptual discussion drawing on psychological theory, we hope this work can offer a
120 design research agenda for augmenting existing parenting fora affordance by exploring plausible solutions from other
121 areas of HCI. At the same time, we discuss the need for cautiously approaching such research directions, that need to be
122 informed by specialist input on best practice surrounding parenting and ethically grounded in the best interests of children
123 and parents, before translating these ideas into workable, immediate design solutions.
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126 127 128 **2 RELATED WORK**

129 130 **2.1 Parenting support programmes in pre-school years**

131 Theoretical and empirical parenting literature within psychology focuses specifically on addressing the development,
132 implementation, and effectiveness of parenting programmes aimed at pre-school (i.e., those aged 2-5) as well as primary
133 school aged children [39, 51, 63, 70, 71, 113, 140]. Such programmes have been rigorously tested (e.g., estimates of more
134 than 200 independent Randomised Controlled Trials for ages 2-9 alone [50]), with substantial evidence-base for their
135 effectiveness (see e.g., [51, 113, 119] for meta-analyses). While the full review of the decades or relevant literature are
136 beyond the scope of this paper, outlining the key approaches and child-parent interaction targets can be a useful starting
137 point in understanding the likely challenges that parents can face during their child's pre-school years (and thus also
138 might be seeking support with online).
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141 Across all of the above programmes, the key parenting principles include reducing coercive practices (e.g., shouting,
142 hitting, or punishments) while enabling the parents and children to set clear limits, support appropriate child behaviour,
143 and facilitate positive parent-child interactions (cf., program content of seminal programs such as Incredible Years [140],
144 TripleP [113], Parent Management Training [70], or Tuning in to Kids [39, 63]). Note that most of these programmes start
145 at 2 years of age, illustrating the transition of toddlerhood and pre-school age as a 'crucial developmental period where
146 parents may first encounter the need to deal with a mobile, defiant child' [118], and the associated different parenting
147 skills and interactions required (cf., [22]). Specifically, the programmes focus on helping parents positively manage child
148 misbehaviours, facilitate child's self- and emotion-regulation skills, while promoting child's increased independence
149 (cf., [50, 113] for detailed overviews of two major programmes). Majority of the training is aimed at scaffolding specific
150 changes in parent's behaviour (e.g., increasing praise giving, positive attention, calm but firm rule settings, parent-child
151 discussion), which are then assumed to help shift child's behaviours over time. Here, the delivery mechanisms for skill
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157 development are different to those seen in online support (see section 2.2), as there is more focus on gradual, reflective
158 learning.

159 These programmes draw on the same parenting mechanisms to support a range of populations, from targeted clinical
160 interventions (such as those for parents of children with early conduct disorders) to general population samples (as part of
161 public health prevention programmes). The main difference across such widely different users is then in the intensity of
162 support provided and course delivery length (e.g., from 12-14 weeks of 2h group-based sessions [51], to two-to-three
163 20 minutes long phone conversations). Regardless of the format, the programmes include a combination of information
164 delivery and skills development (such as through role plays).
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167 Scaffolding parenting skills development is seen as a complex endeavour, with a number of intervention mechanisms
168 required to enable parents to try out and continue using new parenting strategies. For example, through scaffolded
169 reflection, parents learn to become more aware of both parental and child mental states [109, 122], and to reflect on how
170 their own actions impact on their ability to respond to their child [31, 33]. Similarly, the programs directly set up practice
171 opportunities to allow parents to try out new skills outside of the teaching context [27, 44, 133], with in-the-moment
172 support seen as important for reducing barriers of transfer and building natural learning opportunities that can fit into
173 everyday routines [26, 127]. Finally, habit formation support is crucial for parents to establish routines that promote
174 stability and child self-regulatory skills once these are developed [1].
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177 Traditionally, parenting programmes are delivered through in-person mechanisms, whether these are 1-on-1 sessions
178 (e.g., for clinical populations) or group-based interactions. The limitations of such in person models are well known in the
179 literature, as the reach—and thus societal impact—of face-to-face parenting programmes is substantially impacted by
180 challenges in recruiting, engaging, and retaining parents due to multitudes of barriers to attendance (cf., e.g., [13, 96, 113,
181 125]). As a result, many of the established programmes have started developing online versions of the content. So far,
182 however, such developments are utilising only a limited set of interaction design approaches (at least from the vantage
183 point of the HCI community): mostly pre-recorded videos together with interactive web-based activities (cf., [13, 46]). A
184 minority of programmes have also started to explore peer support capabilities within the closed, course-specific online
185 platforms (e.g., [113]), with promising results.
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189 **2.2 Understanding of parenting support in online fora**

190 An emerging area of scholarship focuses on in-depth, qualitative understanding of how expecting or new mothers
191 seek and receive support during the transition and the first months/years of motherhood through online communities
192 [53, 82, 87, 88, 91, 135, 138]. For example, Lupton [87] examined the use and value of digital media through focus group
193 discussions with women who were pregnant or gave birth at most 36 months ago; Lebron et. al. [82] outlines how mothers
194 seek information about breastfeeding by analysing 258 threads on a parenting forum; Madge [88] draws on interviews to
195 understand how women with newborns or young children use parenting websites to elicit information / support about
196 parenting matters; and Gibson [53] has employed ethnography and interviews to understand how technology affects new
197 mums, with parenting fora such as Netmums ranking highly as a source of information and developing confidence in the
198 transition to motherhood. Across these studies, the findings show that parents use digital media mostly for emotional
199 support, as well as instrumental support in the form of psychoeducation, reassurance and normalisation of perceived
200 difficulties, and associated decision making support.
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204 Moving beyond the general online fora use, several HCI oriented studies examined the social support available
205 online to parents of children with special needs [2, 3, 18], those facing mental health challenges [29], or those facing
206 pregnancy loss [7]. Finally, other work—often coming from the sociological literature—provides a broader overview
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209 of the types of digital resources parents utilise, with parenting fora emerging as an established source of support (e.g.,
210 [32, 54, 65, 86, 105, 114, 137]).

211 Across these disparate literatures, the findings are however consistently showing how parents seek and receive both
212 informational and emotional support through online community engagements [36, 87]. In particular, digital resources
213 provide immediate and customised informational support, which can help parents gain information on normal child
214 development and what to expect especially in pregnancy and early years of child development [53, 86–88], as well as
215 health related information such as when their infant is unwell [37]. In addition, the online fora are seen as providing a safe
216 space to expression and cope with negative emotions that would normally go beyond of the appropriate narratives of a
217 'happy mum' (cf., [36, 87]). In particular, parenting websites such as Mumsnet give parents the opportunity to normalise
218 such feelings, giving space for understanding and support, which the users might not dare seek from friends, family, or
219 professionals – a range of papers show how (mostly mums) sought reassurance about normality of feelings, and assistance
220 in making those judgements (e.g., [36, 88, 101]).

221 To best of our knowledge, very little research has considered online parental support in the context of complex situations
222 where parents are seeking help with managing their child's challenging behaviours during a period of rapid developmental
223 and social change. The closest work so far consists of reviews examining the use of digital technologies in parenting more
224 broadly, including parents of older children (cf., [13, 16, 32, 36, 54, 84, 105, 137]). Overall, these findings showcase the
225 importance of online support: for example, online websites were reported as the second most common source of parenting
226 information used by 65% of parents, right after friends or other parents [13]. However, these review / survey studies are
227 unclear about if/how support is received on these sites, how the needs for support change as children develop over time,
228 nor what are the interaction design implications for the underlying fora design.

237 2.3 Online support systems in other areas

238 A vast body of research has highlighted the importance of digital support groups in providing mutual aid and assistance
239 in other stressful contexts, such as for individuals going through chronic or life-threatening illness [2, 41, 75], or those
240 facing situations that can be perceived as socially or emotionally stigmatising in some parts of the society (e.g., mental
241 health difficulties [79, 83], pregnancy loss [6], menopause [80], abuse [8], or sexual preferences [144]), where careful
242 management of online identity is required (cf., [9, 14]).

243 Much of the work has focused on the impacts of (pseudo-)anonymity in online spaces which enables safe disclosure
244 [4, 5, 8, 30, 95, 115], together with increased chances of receiving valuable social support (such as reciprocal disclosures
245 which can normalise the posters' experience). For example, the degree of anonymity has been linked to the differential
246 expectations on personal impression management, such as in the ratio of 'positive' (e.g., reporting on successes in face of
247 challenges) vs 'negative' (e.g., requests for support) posts, with (pseudo-)anonymous communities more conducive to
248 asking for—and receiving—help (cf., [2, 95]).

249 Across all these domains, a surprisingly consistent finding is the benefit of receiving of both emotional and instrumental
250 support in such online settings, analogous to the parenting literature described above. Again, these cases have highlighted
251 that support is often characterised by gaining factual knowledge, help with major decision making, and emotional support
252 rather than providing guidance on applying and learning new practices which we outline is central within the parenting
253 interventions literature. We will return to these commonalities and differences in more detail in Section 5.3.

2.4 Motivation and research questions

In summary, a growing body of prior work has highlighted the importance of parent programmes, and the increasing potential value of online communities to provide support to parents of pre-school children. Prior research has shown that online social forums are a key venue for expecting or new parents, parent of children with special needs, those facing mental health challenges, or pregnancy loss. However, to our knowledge, limited prior research has examined how parents seek support for child behaviour-related needs — as an example context that requires careful scaffolding to manage situated, complex problems. From an interaction design perspective, little is known about the one-on-one poster and commenter interaction, and how well the responses fit with and help to address the original poster's needs.

To this end, our research questions (RQs.) asked:

RQ1. (a.) What percentage of posts on an online parenting forum focus on help-seeking concerns regarding the behaviour of children ages 2-5 years, and (b.) what do these child behaviour concerns entail?

RQ2. (a.) What type of support is given to these concerns in the fora, and (b.) what are the challenges that arise in support-giving?

RQ3. If we take a parenting interventions theory view, what are the opportunities for interaction design in potentially resolving any identified challenges?

3 METHODOLOGY

3.1 Context overview – Mumsnet online forum

The primary online parenting fora dataset was collected from Mumsnet: Mumsnet is the largest British parenting website established in 2000, which hosts over 10 million monthly unique visitors to its discussion board.

Existing research suggests that typical audience and users of Mumsnet tend to be highly educated [102], and with majority being female in their self-identification [99]. However, there is a growing interest by posters identifying as male or fathers who seek support or information from the same body of online community as well.

Our decision to focus on Mumsnet was motivated by our desire to understand the extent to which complex child behaviour needs were prevalent in online parent help-seeking and the interactions that ensued between posters and responders. By focusing on Mumsnet—as a prototypical forum that has many of the key design affordances of online parent forums (e.g., topic based posts, discussion boards for questions and responses, an active community of contributors)—we were able to take a deep dive and focus in detail on how the design of the forum impacted on interactions relating to complex child behaviour needs. Owing to its prominence in UK parenting space and prior work looking at Mumsnet use for parents (e.g., [37, 100, 101]), we anticipated that Mumsnet would generate a detailed enough dataset over a one year period, owing to its high volume of users and traffic [97].

3.2 Ethical considerations for researching public online data

The ethical practices of researching public online data remains highly debated with little consensus across university ethics boards on common recommendations [139]. In line with a growing body of work that critically considers the benefits and risks of using publicly available online data, we employed a series of measures to ensure the careful treatment of sensitive, personal data [20, 45, 52]. First, we ensured that all data was publicly available, rather than scraping data from a researcher-initiated membership account. Next, we employed a set of disguises for anonymising the data [20]. These comprised of removing all user IDs and rewording post quotations to mask personally identify details. Having made these edits, to ensure that we were capturing credible accounts of posts, as part of the analysis, the team regularly

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466 total threads in Mumsnet 'Being A Parent' subforum, between 1 Jan – 31 Dec 2019											
RQ. 1 → Original posts	Other	Potty Training	Physical Development	School & Daycare	Diet & Food Habits	Sleep	Medical Conditions	Activity & Product	Parent's Emotion	Behaviour Discipline	↓ RQ.2 186 threads comprising 39.9% of total threads across the data Then extracted 75/186 threads (40%) as a purposeful subsample based on number of thread responses
Number of threads:	52	16	23	30	47	62	68	90	164	186	

Fig. 1. Dataset selection for Content Analysis and Thematic Analysis

met to discuss the developing themes in the context of the original data. Lastly, no attempt was made to contact or solicit the posters for other details.

3.3 Procedure

To investigate parent help-seeking and help-giving interactions, we first needed to identify the categories that parents raised concerns about, and the extent to which child behaviour concerns were a prevalent help-seeking category (RQ1). To achieve this, we first examined all original posts in the Parenting sub-forum for each day over the course of one year to group the posts into topic areas and identified those relating to parents questions about their child’s behaviour. As a side effect, this step enabled us to identify the relative frequency of the overarching topic categories that parents sought help for. Methodologically, we used a content analysis approach [43, 48, 101], focused on the thread-starting *original posts only*. Next, to investigate help-giving practices (RQ2) we focused only on threads about child behaviour (and associated parenting emotions). We used an inductive thematic analysis of *the full threads* reacting to the selected initial questions (see figure 1). Throughout both steps, we triangulated the empirically grounded data (e.g., types of challenges parents face or types of support received) with the theory-driven work based on the body of parenting interventions within psychology (cf., Section 2.1).

3.3.1 Content analysis of parental help-seeking concerns (RQ1).

Dataset generation. We downloaded all original posts (i.e., the title and thread-starting question) in the Being a Parent subforum for each day between 1 January 2019 to 31 December 2019, using a public search function that allows both members and non-members to search the Mumsnet’s discussion forum archives using related keywords and/or posted date range.

To ensure that the posts in our dataset were related to parents concerns regarding 2 to 5 year old toddlers children, we utilised a running list of abbreviations and keywords frequently used by Mumsnet’s posters, such as terrible twos, 3yo, DS4, DD (5 yrs), as identifiers to retrieve these archived threads for analysis. We iteratively fine tuned this list by full manual checks of selected days to ensure minimum relevant posts missed; and also identified and removed any false positives (i.e., posts for children below 2 years or over 5 years) during the content analysis step. Aside from filtering for age, all other parenting-related post content was included in the coding.

The dataset intentionally excluded posts after 31 December 2019 considering that the COVID-19 pandemic, that officially started in January 2020 in the UK, may impact on the nature of advice parents were seeking. This dataset used in our analysis consists of both the original poster’s question title and post content.

365 *Coding process.* Following similar methodologies to those used by researchers analysing the content of Mumsnet
366 [48, 101] as well as other related online work (e.g., fanfiction communities [43]), the research team first inductively
367 developed an initial draft of codes independently by pulling a set of ten to fifteen original posts from the dataset randomly.
368 Main code categories (e.g., sleep, physical development, potty training etc) were reviewed as a group, and each main
369 code category was accompanied by sub-categories of codes (e.g., the sleep sub-categories included bedtime, irregularities
370 with sleep and sleep dependencies), capturing rich contextual descriptors of each main code. After the group review,
371 we generated a draft codebook and each member in the research team independently coded the same selected set of 15
372 posts. We documented areas of agreement and disagreement for each main and sub codes, discussed disagreements in
373 weekly team meetings, and arrived at a group consensus for each review. This resulted in new codes being created and
374 existing coding schemes continuously being refined to reflect the full range of concerns posted by parents in the year
375 2019. As many of the posts referred to multiple aspects of parenting, each post was coded with up to two main codes. The
376 collaborative coding approach [128] allowed us to consistently apply the codes for each data. The final main category
377 coding scheme encompassed 10 categories and the number and percentage of posts coded within each category (see Table
378 1 for summary).
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383 3.3.2 *Thematic analysis of support giving for child behaviour (RQ2).*

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385 *Dataset.* Utilising the results of the content analysis, we focused threads child behaviour-related threads as our dataset
386 (see section 4 and figure 1). Whereas the content analysis focused solely on original posts, here, we included the fuller
387 threads of commenter and original poster responses to original posts.
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390 *Coding process.* To address RQ2, we carried out an inductive thematic analysis. The goals of the analysis were to (a.)
391 identify what kinds of support was given by commenters in response to behaviour and discipline questions in the fora, and
392 (b.) explore how helpful these responses were for posters in addressing their concerns (in as much as that was possible to
393 discern from the post content). Using the qualitative analysis tool Dedoose, we descriptively coded response posts to
394 original posts for 75 individual threads. This represented approximately 40% of the original 186 threads relating to child
395 behaviour, and was selected to reflect a purposeful subsample of posts based on the number of responses in the respective
396 threads (with upper and lower quartile and around the median). Following an reflexive coding procedure [19, 134], we
397 used an overarching question ('What kinds of support was given by commenters?') to drive the coding and organise
398 the codes into themes. We generated 84 descriptive codes then iteratively clustered these codes into broader themes to
399 capture the kinds of support that was offered in responder posts. The themes were reviewed and refined through ongoing
400 discussion between three of the authors.
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404 To analyse the helpfulness of and challenges with offering commenter advice, we focused on whether commenter
405 advice aligned with widely accepted, evidence-informed parenting recommendations that are prevalent in behaviour
406 and emotion focused parent programmes (cf. section 2.1). We also paid attention to the interactions between OPs and
407 commenters by considering the ways the OPs acknowledged and reacted to the offered advice (if any), and to the
408 different ways that commenters responded to requests for help. Our capacity to make judgements about the helpfulness of
409 commenter advice was informed by the first and last authors familiarity with the parenting and child mental health context
410 (with five+ years of active research in this area), as well as holding honorary researcher contracts over the past year within
411 a UK National Health Service (NHS) Child and Adolescent Mental Health Service; engaging in regular discussion about
412 the research with clinical psychology colleagues. The first author also held direct clinical experience having worked for
413 10+ years in the UK NHS in the area of communication and parent-child interaction. To ensure that we were generating
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417 credible interpretations of commenter posts, using a shared document, the research team met regularly to discuss the
418 themes, codes and extracted examples to check that the themes reflected what was presented. This allowed for discarding
419 themes with insufficient data or merging themes, where needed.
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421 **4 UNDERSTANDING HELP-SEEKING - MUMSNET FORA PARENT CONCERNS (RQ1)**

422 Our content analysis was focused on identifying what proportion of parent support-seeking on the forum was focused
423 on child behaviour challenges (RQ1a) and what this support seeking entailed (RQ1b). The findings identified that
424 behaviour and discipline were the most prevalent topic categories that parents sought help for (accounting for 39.9% of
425 all threads), followed by parent's emotion (35.2%). From our perspective, this was interesting as the parenting literature
426 has also largely focused on managing child behaviour and emotion related challenges through parenting programmes
427 (e.g., [51, 62, 70, 112, 140]). As parent emotion is often closely associated with child behaviour, for example, parent guilt
428 associated with their parent practices, we included this category in our focus on help-seeking. In this section, we only
429 outline the analysis of these two categories: behaviour and discipline, and parent emotion; the full description of all 10
430 categories is available in Appendix A (see also Table 1 on page 10 for a summary).
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436 **4.1 Help-seeking for behaviour & discipline**

437 In terms of behaviour and discipline, posters sought help with managing their child's behaviour and tantrums by
438 tapping into the community's experiences for validating their concerns, determining whether their child's behaviour was
439 'appropriate' and importantly gathering helpful strategies for dealing with child misbehaviours. Posters used Mumsnet
440 as an avenue to seek disciplinary strategies from other parents, often as a last resort when they had "*reached the end*
441 *of (their) tether*". Posters also used Mumsnet as a form of expectation check to navigate the uncertainties of parenting,
442 one poster lamented: "*AIBU (Am I being unreasonable) to expect my 4 year old to play by themselves for a short while*
443 *without needing constant interaction?*" Connecting with a key underlying principle of parenting support programmes
444 [39, 51, 63, 70, 71, 113, 140], our findings suggest that Mumsnet posters sought help with developing positive parenting
445 skills (e.g., setting clear limits when dealing with tantrums) as a way of addressing child conduct concerns and improving
446 parent-child interactions.
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451 **4.2 Help-seeking for parental emotion**

452 Help seeking posts relating to parental emotion often encompassed strong negative feelings of frustration and despair
453 about themselves as a parent or their child, and in some cases, their partner, parent-in-laws or other family members. What
454 was common across the threads was the search for empathy. The content suggested that posters desired a community that
455 could listen and identify with their seemingly isolated struggles as a parent. We observed numerous discussions on the
456 frustrations and mismatched expectations behind parenting with a significant other as well as dealing with the opinions of
457 extended family members who did not empathise with their views on parenting. For instance, a poster explained how
458 she wanted to dedicate individual attention and time for each child and felt upset when her husband "*thinks I'm taking*
459 *favourites and makes me feel guilty for wanting to spend alone time with dd1 (dear daughter one)*". At the extreme
460 end of these threads, posters could be struggling with depression as they expressed a sense of '*hanging on by a thread*',
461 expressing feelings of inadequacies for not living up to their 'ideal standard' of being a parent or not 'doing enough'. In
462 line with prior work, our findings showed that expressing and seeking emotional support in a secure space is an important
463 component of online community support [2, 41, 75, 87, 88].
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Category	Description	Freq	%	Avg / Med	Example of original post
Behaviour Discipline	Posts related to child's disruptive, inappropriate, 'abnormal' or social behaviour; and disciplinary approaches	186	39.9	17.2 / 8.5	A two year old whose tantrums are out of control: "We try talking to her and reasoning with her; we've tried shouting at her [...] gotten to the stage where we dread bedtime."
Parent's Emotion	Poster's emotional and mental challenges, in the context of parenting and dealing with their spouse or's family.	164	35.2	20.9 / 8.0	Failure as a mum: "I don't feel like I get enough time with her and feel so guilty all the time. I just don't know how some mums do it? [...] how to manage a busy schedule and be a good parent?"
Activity & Product	Recommendations for things to do or products for their child, sometimes as to what is 'age-appropriate'.	90	19.3	13.1 / 9	Bag recommendations for a 2 year old and newborn: "Ahh I have a kipling backpack which is fine but has turned into a bottomless pit of crap. Any suggestions of a practical bag while out and about with 2?"
Medical Concerns	Posts related to child's medical issues such as potential/existing diagnosis, treatments, and routine care.	68	14.6	13.9 / 6.0	How long to wait for chickenpox?: "... Today she has a bit of a cold (runny nose, cough) [...] how long do I have to wait before I can assume she hasn't caught it?"
Sleep	Posts related to sleep or nap-related issues such as child's difficulty staying asleep all night, refusal to stay in their bed, crib transitioning and others.	62	13.3	15.5 / 8.5	4 year old anxious to fall asleep/nightmares: "My question is what to do? I am reluctant to add to our routine/give him yet another comforter etc. and I've spoken with him during the day already many times without any impact. Any advice?"
Diet & Food Habits	Posts related to child's weaning issues, dietary routine, breastfeeding and appropriate strategies to manage eating behaviours.	47	10.1	17.6 / 10.0	Help!!!!: "My two year old toddler has decided evening meals are no longer for her and won't eat any later than 2pm during the day [...] I can't even wean her off as I have no support. Has anyone got any suggestions as things to try to get her eating again?"
School & Daycare	Discussions on child's behaviour in schools, nursery, childminders and child-care.	30	6.4	23.5 / 8.5	Accident at nursery: "My son had to be taken to hospital [...] But I can't help but feel angry [the nursery] have said it couldn't of been prevented. How would everyone else handle this situation?"
Physical Development	Posts related to child's communication, physical and other developmental milestones, such as speech delay, motor skills and others.	23	4.9	24.0 / 12.0	Toddler behind on verbal skills but he won't sit or focus enough for us to try to develop them: "He used to try to repeat words when we asked, but doesn't anymore. Do we need to worry and look for more help? Or should just keep trying and see how it goes?"
Potty Training	Posts related to potty training issues such as children's reluctance using the potty and regression in training.	16	3.4	28.7 / 9.0	5 year old is still in nappies, Am I failing as a dad?: "...Sitting him on the toilet but he will scream and get himself in such a state and ends up making himself sick. So where do I go from here?"
Others	Other wide-ranging discussions related to parenting, from advice on legal guardianship to kid-friendly travelling.	52	11.2	22.2 / 8.0	Explaining death of a pet: "How do I explain death to a 2 year old? Should she come to the vet or say goodbye at home? Any other advice on explaining where he has gone?"

Table 1. Summary of the 10 categories, including its description, number and percentage of posts (out of 466 total) coded with that category, average and median number of replies across threads in the category, and an example post each. Note that each post was coded with a up to 2 different categories.

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5 UNDERSTANDING SUPPORT GIVING - MUMSNET FORA RESPONSES (RQ2)

We scoped the dataset to only those threads that specifically focused on parenting questions relevant to behaviour concerns for parents with children aged 2-5 years. We examined the types of support that were offered by commenters within the online forum context. This was important for identifying any challenges that the online fora format posed for parent seeking help around such complex questions (cf., section 2.1). We present the findings by first focusing on the specific content and types of support offered for child behaviour-related concerns, then consider the challenges of providing helpful advice.

5.1 Content and support (RQ2a)

A major portion of commenter responses was geared towards providing instructional support for addressing OP questions. This was in the form of strategies for tackling particular child behaviours and through comparisons with wider developmental and social norms, as well as sharing emotional experiences of parenthood. The content of commenter posts was largely connected with the personal experiences and beliefs of the commenter, their general views about established educational and therapeutic approaches, and developmental milestones. As such, content support reflected common understandings for managing behaviour and emotion that was informed by positive parenting practices—that we interpreted as helpful on a generic level—yet linked with the commenter’s experience of enacting parenting.

5.1.1 Instrumental support on child's positive behaviour changes. In line with prior research on support seeking through online fora, we observed that commenters frequently offered instrumental support [8, 9]. In this context, the instrumental support focused on offering practical and actionable advice associated with positive parenting principles: suggesting strategies, activities, products, and onward signposting to professional help. This instrumental advice seemed independent of the type of help requested by original posters, suggesting that commenters largely treated nearly *all* OP’s requests for help as *practically actionable* – in other words, seeing the parenting problems as *inherently 'solvable'* and offering what they hoped was specific advice on how the OP could resolve the situation.

For example, in the case of one OP who sought help for difficulties with interacting with their child owing to limited shared interests, commenters responded with practical solutions for extending the range of experiences as a way of building opportunities for common interests involving parent and child: *“spend more time outdoors - woods, playgrounds, beaches, that sort of thing, where the focus is on fresh air, exercise and play rather than conversation. I always found pretend play games tedious so would much rather go out somewhere!”* Similarly, in another thread where the OP voiced concerns about their toddler’s delayed verbal language and interaction skills, commenters responded with specific parenting strategies, types of activities and services to liaise with for support: for example, *“don’t put pressure on him. He dislikes stories so don’t read to him. Just speak with him naturally whilst he’s playing with his trains and water. Try not to use too many words, he will tune out and this will become background noise.”*

The advice offered focused predominantly on how parents (and the OP in particular) could apply changes in how they interacted with their child to lead to positive change based on the poster’s personal experience of similar situations and their comparisons to developmental norms: *“At this age, non verbal communication is the most important thing. Play is also very important. Does he show you things that he’s interested in? Does he point to the things he wants? My son, who is autistic couldn’t play appropriately at all and used to spin around the outside of a room.”* Our findings suggest that by positioning OP concerns as practically actionable, commenters sought to offer support to OPs in ways that were achievable with the resources available through the online platform, and that these suggestions served to reassure the OP.

573 **5.1.2 Emotional support for validating and normalising parent concerns.** In addition to any actionable advice,
 574 commenters responses also expressed emotional support, for example in the form of inviting the OP to be compassionate
 575 (“*be kind to yourself!*”), or by communicating empathy (“*I am in a similar situation to you...I completely understand*
 576 *the worry*”) and encouragement (“*I promise you that it does get better!*”). Such emotional support was most commonly
 577 offered when directly solicited by OPs in the initial post (“*I just need to talk to someone*”) or in situations where OPs had
 578 commented on their personal feelings (“*I am eaten up with guilt*”).
 579

580 In particular, commenters displayed empathy, validation, and encouragement particularly in situations where the
 581 OP expressed themselves as struggling with their child’s conduct. In such cases, emotional support acted as a way
 582 of normalising the OP’s concerns, either by positioning the OP’s concerns as commonly experienced by many in the
 583 community, or as problems that were typical of families with children of a similar age. One way we observed commenters
 584 normalising the OP’s feelings and associated actions was through self-disclosures of similarly challenging situations.
 585 For example, a commenter, who was responding to an OP who describes ‘lashing out at their child’, described their own
 586 experiences of losing their temper with their child whilst also providing encouragement on the OP’s parenting efforts: “*I*
 587 *have also really lost it with my son before and I still feel really bad about it. [commenter explains event]...being a parent*
 588 *is SO hard...You sound very kind and very loving. Forgive yourself and move on! I will tell myself the same!*”
 589
 590

591 In other cases, some commenters offered sympathy and reassurance to the OP’s situation in less specific ways, “*I*
 592 *totally understand this feeling having been through it. . . Sorry if this isn’t helpful - just wanted to reply with a message to*
 593 *say there is hope*”. Further, emotional support was often provided to individuals who were self-critical or felt inadequate
 594 about their parenting skills, “*Go easy on yourself - you’re probably doing a great job*”.
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597 In all of these situations, commenters supported the OP emotionally by showing how the OP was not alone in facing
 598 their situation, establishing a sense of belonging within the community, “*Your post sounds so similar to the situation we*
 599 *have at home with DSI (dear son one)... I hope that it helps knowing you’re not alone*”. We observed that establishing an
 600 online community provided a trusted environment for individuals to talk about frustrating experiences in an atmosphere of
 601 mutual support and acceptance. Evidencing collective support, some of the threads—especially those with large numbers
 602 of comments—began to evolve into support-group-like discussions among users who shared personal experiences and
 603 feelings, coping strategies, or firsthand information. However, in these cases, we rarely observed the OPs engage further
 604 and return with updates on whether progress has been made.
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607 Overall, emotional support comments appeared to normalise and validate OPs feelings, without necessarily suggesting
 608 ways of resolving the situation. We note that these patterns appear analogous to other contexts where online support is
 609 sought [53, 82, 135]; and is also aligned with what the OPs have expressed as their emotion support needs, as identified in
 610 the content analysis (cf., Section 4.2), where the aim of ‘feeling heard and understood’ seemed to motivate many of the
 611 OP questions.
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614 **5.2 Challenges of providing helpful advice (RQ2b)**

615 Whilst commenters largely attempted to respond with actionable solutions and/or emotional support, across the data set
 616 we observed that responding to OP concerns about child behaviour was a complicated and challenging process. This
 617 related to challenges for the commenter (in constructing helpful support based on limited context), and challenges for the
 618 OP (in receiving advice and appraising its helpfulness). This is different to what has been observed in prior studies on
 619 online parenting support, where informational and emotion support-giving can be more straightforward, for example,
 620 when advising on practical decisions for parents of younger children (e.g., what to consider when starting your child on
 621 solid foods).
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625 **5.2.1 Clarification requests and misinterpretation signal limited contextual understanding.** We observed that com-
626 menter often asked for more information or clarification in order to be able to offer helpful advice. However, when
627 examining the structure of follow-on interactions between OPs and commenters, follow-on information by the OP in the
628 same thread was brief and arguably insufficient for equipping the commenter with the contextual information that they
629 sought. As such, responses seemed to not fully capture a situated understanding of the OP's concerns, highlighting tensions
630 between the OP's advice sought and commenter's supportive responses. Through their responses to OPs, commenters
631 expressed difficulties in fully understanding both the situation that was being described and the type of help that was
632 being requested by the OP. These clarification engagements were quite common, appearing in 39 of the 75 threads
633 analysed, evidenced by commenters asking for more information about the particular situation and details about the
634 existing supports put in place by the OP. For example, in response to an OP seeking help for their two young toddlers who
635 were displaying oppositional behaviour throughout the day, commenters within the thread requested further contextual
636 information to understand about the practices that the OP was already putting in place. One commenter asked "*How*
637 *would you typically set boundaries - would you try stopping them from doing something you don't want or would you get*
638 *them to do something you need done? How are you with confrontation in general? I agree [example programme] is great*
639 *for advice about setting boundaries firmly but kindly."* The example showed that the commenter's advice was closely
640 linked with their understanding about the specifics of the OP's existing strategies for managing child behaviour. However,
641 these iterative cycles rarely continued beyond the commenter receiving enough context to offering their advice – we only
642 observed 7 instances of the OP returning to the thread to report on if and how the suggested advice had worked and/or to
643 request additional support.
644

645 Where commenters had limited information about contextual particulars, they also made inferences to help with filling
646 in the gaps of their limited understanding and motivating their advice. Oftentimes, OP questions generated many varied
647 and sometimes contradictory responses that were linked to the commenter's personal beliefs and experiences about how a
648 situation should be managed, which did not always align with advice that would be found in formal parenting training
649 resources. In one example, an OP had asked for 'words of encouragement' owing to their 5 year old child's early morning
650 bedroom visit being startling. In the discussion that ensued, one poster interpreted that the OP did not want their child to
651 visit their bedroom. Taking the OP's description of their child's behaviour as 'sneaky', the responder commented "*He*
652 *wants to come and visit you but knows you don't want him to, that explains the "sneakiness". He needs a bit of a cuddle in*
653 *the morning. He's only 5."* Like in the prior example, the commenter's actionable advice was closely linked with their
654 interpretation of the OP's attitude towards their child, which was however not aligned with OP's needs: "*The thing is we*
655 *REALLY don't mind him visiting us in the mornings and have never told him not to come see us. We're very happy for him*
656 *to climb in with us which he does. The problem is the sneaking and the scaring."* This simple example demonstrates how
657 even in a relatively tractable situation—child's very specific behaviour—the type of support that was requested and kinds
658 of advice offered might not have always matched up straightaway; and the importance of the contextual understanding
659 necessary for instrumental support to be helpful.
660

661 **5.2.2 Commenters provide brief responses by selectively deciding which parts of the post to focus on.** The most
662 common approach seen across the threads was for commenters to respond to OP questions through short, succinct
663 responses. Whilst this appeared to work for responding to OP requests for bounded, actionable strategies, responding
664 was more of a challenge for complex OP questions that were multilayered and required different types of support. For
665 instance, where the OP query was fairly brief (e.g., "*My 5 year old son is asking me to constantly repeat myself or if*
666 *everything is ok...Has anyone else ever experienced this?"*) commenters offered resolvable advice by asking the OP
667

677 reflective questions (“*If he’s asking you to repeat yourself do you think he’s a bit deaf?*” or “*have you been ill or has*
 678 *something been worrying you which he may be aware of?*”). In contrast, where OPs composed long posts and asked for
 679 reassurance and support with managing their child’s restricted interests or oppositional behaviour, we observed a wide
 680 range of commenter responses that each focused on different parts of the original post. Whereas before, we observed
 681 commenters asking for additional information, here, commenters chose to focus on particular dimensions within the
 682 original post, so that they could offer succinct advice within the thread. For example, where one OP expressed worry over
 683 their child’s school having concerns about their child’s restricted interests, commenters offered a range of responses each
 684 focusing on different elements of the original post (e.g., “*you should keep an open mind about whether her passion for*
 685 *art is actually a restrictive behaviour*”, versus “*I’m sure she will be fine, please don’t worry.*”). This suggested that it was
 686 difficult to respond to the often multi-dimensional posts, and that different commenters prioritised different information.
 687 Consequently, the OP follow-up responses suggested that whilst grateful for the comments, their help-seeking was not
 688 always resolved, evidenced by OPs attempting to clarify their original concerns (“*the thing is I’ve looked at behavioural*
 689 *problems online. She doesn’t display any behaviour that is listed.*”), or rejecting possible scenarios (“*thanks everyone. I*
 690 *also don’t like the suggestions that she could have something wrong with her at this stage.*”). Another alternative may also
 691 have been that some parenting issues might have been resolved via direct messaging between community members and
 692 therefore not visible in the threads.

693 Finally, the loose structure of the forum thread meant that commenters responded with advice that had varying levels
 694 of detail and abstraction: from high level principles, “*There is no way that I’m letting my kids grow up thinking that*
 695 *[tantrums are] a useful tactic*” through to very situation-specific advice, “*Sit down with a book and ignore him*”. In
 696 situations like these, the asynchronous online format seemed to make it difficult for the OP to action, reflect on, and learn
 697 from commenter advice in the context of their daily life.

704 5.3 Summary – similarities and differences to other online fora

705 Both our content analysis and thematic analysis showed that for children aged 2-5 years, Mumsnet parents and post
 706 responders were mostly concerned with receiving instrumental and emotional support for child’s behaviour and discipline
 707 difficulties, as well as the resulting parental frustration. We note that these observations are in line with what would
 708 be expected based on child developmental stage and changes in social expectations [22, 59], as well as the parenting
 709 intervention literature in psychology (cf., [22, 60, 113]) that emphasises the focus on the parent’s own behaviour and
 710 perceived ‘parenting skills’.

711 Our data illustrates how the general patterns of the needs of parental help-seeking and support—i.e., parents’ hopes of
 712 receiving both emotional (‘how can I feel better about my situation’) and instrumental (‘how can I fix this?’) support—are
 713 well-aligned with what is known about online support in other areas and contexts (cf., [4, 9, 80, 89, 107]). In particular,
 714 our findings illustrate the *similarities* in which Mumsnet parents in our dataset seemed to ask for *emotional support*
 715 alongside instrumental advice and receive such support by having their emotions validated, seeing they are not alone, and
 716 that others experienced similar difficulties – cf., Section 5.1.2. This is aligned with prior work showing parents of younger
 717 children seeking and receiving such support [36, 54, 83] within a safe community space [36, 88, 101].

718 However, our findings also highlighted the *differences* in what parents of 2-5 year olds seek help for as well as how
 719 *instrumental support* can be provided within this parent population, especially the context- and age-specific challenges of
 720 *transferring of parenting advice into practice*. In particular, many of the problems experienced by parents were framed by
 721 OPs and commenters as *inherently ‘solvable’*, such as through changing of how, what, or when the parent communicates
 722 with the child. This is a key difference—and an opportunity—of this parenting context, especially when contrasted to
 723

729 other areas where online support has been studied previously in detail, such as chronic illness [121], serious mental health
730 difficulties such as psychosis [83], or support for stigmatised populations [2, 8, 14], where the online support can help the
731 OP identify additional resources to help cope with the challenges they face but is unlikely to help directly resolve the
732 underlying 'problem'.
733

734 That said, although the issues were—in principle—seen as solvable¹, providing the OP with practical solutions still
735 appeared difficult within the current fora affordances that prioritised short and succinct thread responses (cf., Section
736 5.2). This was evidenced by clarification engagements by both OPs and commenters, varied and sometimes contradictory
737 advice by commenters, and polite rejections of some advice by the OP. OPs often expressed multilayered and complex
738 situations that were not fully understood by respondents, leading to difficulties in providing the OP with the actionable
739 support required.
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742 6 DISCUSSION

743
744 This paper is motivated by our lack of understanding of how complex parenting questions could be supported through
745 online fora. To unpack these problems we have focused on the ways that parents of 2-5 yo seek and receive support in
746 the context of child behaviour and the associated emotion concerns, where there are known challenges in navigating
747 parenting practices as part of transitional developmental period, i.e., when children are socially and developmentally
748 expected to undergo a fundamental shift in their social and emotional behaviours.
749

750
751 Through empirical work, we first investigated the ways that parents reached out for behaviour- and emotion-related
752 concerns through a content analysis of all original post (i.e., the thread-starting questions) over a year period in the
753 Parenting sub-forum in Mumsnet. In line with the focus of parent programmes, behaviour and discipline and parent
754 emotion were the most prevalent help-seeking topics, which underscores the significance and scale of these challenge
755 areas, and the need for new and accessible parenting practice supports.
756

757
758 Next, we examined the types of support received from people commenting on original posts for threads that focused
759 on behaviour and discipline. The findings showed that within the forum structure, parents predominantly received
760 instrumental and seemingly actionable advice as well as emotional support. However, based on the interactions between
761 help-seekers (OPs) and commenters, we observed that the given advice was not always helpful in enabling OPs to try out
762 new parenting practices as the responses conveyed limited understanding of the OP's situated challenges and priorities.
763

764
765 Given the challenges of providing actionable advice for complex child behaviour, we next focus on unpacking the
766 context-specific difficulties with *instrumental support* for parenting in early childhood². We do so by attempting to
767 combine our empirical data, psychology literature, and own experiences as researchers within clinical parenting contexts.
768 We then suggest possible extensions to the existing interaction design capabilities of online fora.
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773
774 ¹We note that this suggestion, if taken to extreme, is of course problematic; cf., the sociological work discussing such emergent norms of 'good/bad
775 mothering' as per [12, 87, 88, 101], as well as the associated critique of placing all of the responsibility on child development and behavioural on the
776 parents/the mother. The psychology literature, however, does suggest that many of the more localised difficulties that seemed to underpin the struggles
777 expressed by parents online—e.g., child not listening and running into the road—can be feasibly addressed by the changes in parent-child interaction over
778 time (see Section 2.1); while others—e.g., extreme parental stress due to poverty—would not. It is supporting parents with the former, more localised
779 difficulties that interest us in this paper.

780 ²We focus on behaviour support rather than emotional support as the latter has already been well researched and appears aligned with other online-support
contexts [4, 9, 36, 54, 80, 88, 89, 101, 107]

6.1 Challenges and opportunities of designing for parenting support – a proposed research agenda (RQ3)

Our main argument will be that the observed difficulties are likely an example of the '*information-to-application gap*', which is already well understood in the face-to-face parenting programmes literature [50, 60, 126, 140]. In other words, the notion of information-to-application gap emphasises that effective instrumental support in these contexts is rarely 'just' about addressing a *lack of knowledge* (which could be resolved by new information such as a carefully personalised advice from a peer online), but rather it requires empowering parents to *develop new approaches* of interacting with their children (which requires support akin to behavioural change techniques and iterative problem solving). For example, even relatively simple suggestions such as 'try using timeouts' consist of situating an intricate set of new family interactions into an existing social practice, potentially modifying or replacing long-established interaction patterns and habits in the family if it is to be tested and applied by the OP (cf., [113, 124]). In the rest of this section we argue for the importance to having a clearer understanding of the processes that parents undertake in developing new approaches to interacting with their child, and the challenges they face during such process, so that we can better understand the design requirements and opportunities for redesigning the affordances of online fora.

6.1.1 'Inherently solvable' but not simple – challenges of the 'information-to-application' gap. As argued above, the *information-to-application gap* highlights the design challenges of attempting to deliver successful instrumental support around parenting practice *only* through *receiving advice or information* from peers in these contexts. This stands in contrast to other skill-based challenges, such as when a parent of a 6-month old might receive information on establishing sleep schedules, approaches to introducing their child to solid food, or when to be worried enough to call a doctor if a child is unwell.

It is for these reasons that the existing parenting interventions in psychology have long emphasised the *experiential and on-going process* of learning, whereby parents are guided to develop the skills and confidence to support their children in overcoming difficulties [28], requiring a combination of reflection and progressive dynamic changes in context [37], rather than 'simple' information delivery. In other words, the core of the information-to-application gap seems to be in the difficulty of *helping the parents apply* the relatively well-understood—but abstract—*psychological principles* from the established programs (e.g., increase in directed praise, following through with consequences, not giving in to tantrums, explaining decision calmly and empathetically) *in ways that fit* the specific situations that OP faces and the social practices that already exist in the family (cf., also [124]).

Whereas in structured parenting programmes (cf. section 2.1) the *information-to-application gap* would typically be supported through a range of mechanisms that can include reflection, in-the-moment support, and habit formation [1, 26, 109, 122, 127], in our findings, we observed limited opportunities for enacting these mechanisms within the design of the forum. For example, whilst we observed some instances of commenters encouraging OP reflection ("*has something been worrying you which he may be aware of?*"), mechanisms such as self-reflection and in-the-moment support were more difficult to enact. Our findings suggest that the design of the fora prioritised information delivery as a dominant mechanism of parenting supporting. Namely, through OPs and commenters gradually contributing responses within a thread in the spirit of collective problem solving.

However, when trying to problem solve, commenters held limited understanding about the specific situation the OP faced or how the child might respond. Sections 5.2.1 and 5.2.2 point to the specific behaviours showing the commenters and OPs implicitly reacting to these difficulties by, for example, requiring contextualisations questions ('what has the OP tried before? how common/stable was the child behaviour they are describing?'); attempting to describe both the general

833 structure of the problem ('my child never ever listens to me') and a specific example of such behaviour (for example, 'she
834 rampaged through a shopping centre like a she-hulk'); or combining the description of general principles ('try to actively
835 listen to what your child feels') with specific examples ('some of the questions that work for me are X, Y, Z').
836

837 To summarise, there are two main takeaways from the combination of the theoretical and empirical arguments above,
838 which we can take forward to guide our thinking about design considerations in upcoming sections:
839

840 #1 Many—although not all!—of the parenting difficulties related to challenging child behaviour could be *inherently*
841 '*solvable*' if parents and children can be empowered to shift existing parent-child dynamics with sufficient support;
842 and the parenting intervention literature can provide suggestions for specific evidence-based approaches that
843 parents and children find helpful.
844

845 #2 Such challenges in parenting are however *not* only based on lack of information, and *require targeted support*
846 *mechanisms to enable parents in developing, testing, and incorporating new approaches* into their daily lives (seen
847 as 'parenting skills' in the psychology literature).
848

849
850 6.1.2 *Current online fora affordances are unlikely to be sufficient.* If we accept the articulation of the *information-to-*
851 *application gap* as a crucial challenge facing parents *instrumental* help-seeking in these contexts, what are the potential
852 design avenues we—as the HCI community—could explore?
853

854 To the best of our knowledge, no work in HCI has so far aimed to address these design challenges in the context of
855 parenting help-seeking online; and the forum threads data alone does not provide us enough information to propose design
856 directions that would be sufficiently grounded in user-centred design processes (e.g., we lack information to understand
857 if/how/which of the thread exchanges actually led to meaningful changes to the OPs life). We also note that many of
858 the well-utilised approaches that have been successful to promote online support elsewhere are unlikely to address the
859 fundamental design challenges of the information-to-application gap: for example, machine learning systems drawing on
860 big-data to curate related information and/or answers for the question at hand [49, 142] remain, so far, in the knowledge
861 support domain rather than focusing on skills development; systems to help identify localised services and/or information
862 [21, 72, 143] are important but mostly re-direct the instrumental support needs elsewhere; and approaches to strengthen
863 the emotional support provided by the platform such as metrics on how others within a community engaged with or
864 experienced similar situations [17, 145] again would not directly help shift the parenting practices in question.
865

866 In lieu of existing data or close related work, the next section turns to other areas of HCI for inspiration and aims to
867 identify several 'best-bet' design directions that could start addressing the challenge of information-to-application gap.
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871 6.1.3 *Design inspiration from other literatures to augment instrumental parenting support online.* We propose
872 that there are several existing research areas that have addressed challenges *similar* in terms of the interaction design
873 mechanisms required (e.g., remote skills development support) and can thus provide some guidance on plausible design
874 directions; even if the specific systems are *dissimilar* in the technologies available or the context of the problems solved.
875

876 In the rest of this subsection, we will outline three of such domains to provide inspiration on how others have
877 designed for supporting active problem solving and skills development support across a range of contexts, where similar
878 information-to-application gaps exist: personal informatics systems; technology-enabled interventions in families, and
879 non-technological, social support structures in parenting courses. In each of the subsections, we also combine these
880 observations together with the findings from our work to suggest a number of potential design research directions that we
881 believe could lead to meaningful systems addressing the challenges of instrumental parenting support.
882
883

885 *Personal informatics in healthcare.* The first area to inspire novel parenting support online is the work around personal
886 informatics, especially in the context of healthcare (see e.g., [42] for a review). Connecting with our findings on the
887 challenges of presenting enough contextual information, we argue that much of this work shares the users' need and focus
888 on 'active problem solving' in terms of the participants' everyday behaviours (e.g., learning to establish new eating—and
889 self-tracking—habits when diagnosed with diabetes [90]). The technologies designed for these contexts are often based
890 on enabling participants to track the outcomes of their choices over time, and thus to iteratively test and fine-tune 'what
891 works' for them and their body, in their specific situation – see e.g., [69, 116] for specific examples. In other words, such
892 personal informatics systems are in-situ and based on helping the participant go through the process of (i) selecting what
893 to try; (ii) how it can be tried in their contexts; (iii) tracking what the impact was; (iv) deciding whether to tweak the
894 technique or give-up and try something else [94]. In particular, these systems showcase how digital technologies can
895 introduce new possibilities to understand the impact of factors that would be otherwise challenging to unpack for the
896 participant (cf., also [76] for the new intervention evaluation methods these approaches enable).

900 In the contexts of parental help-seeking online, we could for example ask questions such as: *How would the principles*
901 *of personal informatics / self-experimentation apply to the online parenting context? Which aspects can be tracked*
902 *and how might this become embedded into, e.g., existing fora, or remote module-based programs? How might such PI*
903 *techniques scaffold further iterative problem solving support online, perhaps similarly to what is seen on fitness fora? For*
904 *example, early work from Huber [66] shows that parental-child statements could be classified automatically, suggesting*
905 *the opportunity to offer highly situated, practical feedback to parents which was so far impossible to deliver at scale.*
906 *Similarly, early work on 'family informatics' [104] highlight the opportunity to including the child as a more active*
907 *participant in the program (e.g., for older children), as well as a potential avenue to increase communication and empathy*
908 *for the parent-child dyad (which is core for all parenting programs).*

911
912
913 *Non-technological support structures in parenting programs.* Second, traditional parenting programs are known to
914 benefit participants—at least those who can attend and do not drop out—in a range of ways (cf., [50, 113, 119]). We
915 propose that from the known *active components*, aspects that could be particularly relevant to the online contexts discussed
916 here are the reliance on *group-based support*, which follows a *shared structure and set of informational resources*
917 including role-play or other practice scenarios, which *everyone in the group aims to apply at home* over a shared time
918 period, and then have the opportunity to *share their—and listen to the others'—experience* afterwards with some *expert*
919 *support* to troubleshoot any difficulties with application.

921
922 In effect, the traditional parenting groups enable a group of parents, where everyone is facing similar challenges and
923 have a shared set of 'things-to-try', resulting in what could be crowd-based exploration of possible applications. The
924 parents often value the 'experiential knowledge' (cf., [86, 105]) of other parents at least as much as that of the experts,
925 and the structure of the groups is often conducive to what can be seen as shared problems solving - see e.g., [88]. While
926 this ensemble of aspects is not commonly found in the Mumsnet dataset we examined—and to our understanding neither
927 in any other online parenting fora—it does bring a set of plausible, socio-technical design ideas that could be explored in
928 future work, described in the final subsection below.

929
930 For example, we could ask design questions such as: *How might it be possible to introduce key aspects of the shared*
931 *group support available in traditional parenting programs (i.e., 'crowd-sourced' problem-solving with everyone trying*
932 *the same parenting technique) into online fora? How might online spaces be able to extend the reach of such support, e.g.,*
933 *could the groups be asynchronous or blended (e.g., progressing through posts of others who were at the same point in the*
934

937 *programs you are now?). How might the opportunity of at-scale support group (potentially thousands rather than a dozen*
938 *parents) help parents connect with those in similar circumstances, or holding similar parenting beliefs (e.g., [56, 60])?*
939

940 *Technology-enabled interventions in families.* Finally, connecting with our findings on a need for parenting skill
941 development support, a range of exciting work in HCI look at designing—often behavioural change—technologies that
942 provide tools for families to change established practice or introduce new ones. For example, prior work has focused on
943 helping parents and children structure bedtime routines through a combination of ‘token economies’ and in-the-moment
944 scaffolding of the individual steps [131]; or supporting physical activity in families through interactive narrative for
945 parents and children, involving real-world goal setting and reflection [110]. Other relevant work aimed to provide at-home
946 reminders for parenting techniques taught in an ADHD therapy setting [103], as well as structured reading sessions for
947 younger children [108], or support child’s self-management of digital media consumption [64]. These systems showcase
948 the opportunity for user-centred design to successfully design and introduce socio-technical tools that specifically target
949 aspects of family life, empowering the adults and children alike to change towards practices that they prefer. Importantly,
950 most of this work emphasised the agency of even young children, seeing them as active social actors in the family space;
951 while fitting in with the psychological approach of supporting a change in the parent and/or the family environment, rather
952 than directly ‘training’ the child.
953

954 For example, we could ask questions such as: *What are the design mechanisms that would help parents change specific*
955 *aspects of their parenting behaviours in-situ, while relying on online peer support? Examples such as Mobero [131]*
956 *illustrate a way of introducing behaviour economies for a highly specific and habit-based context (bedtime routines)*
957 *in ways that both limit the parental load as well as ease transparency and consistent application. How might this be*
958 *extended to other, more complex parent-child interactions that are either taught in traditional programs or suggested as*
959 *resources online? To what extent would the well-known behaviour change techniques (cf., [93]) work well in these in-situ*
960 *contexts, and when might they fail; and could such interactions ever become embedded into online support settings? In*
961 *which way could such systems ethically take advantage of the emerging pervasiveness of IoT devices within family homes,*
962 *which are often positioned exactly in the places where ‘parenting happens’ (cf., [15, 106]), and connect to the emotional*
963 *and instrumental support online?*
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969

970 **6.2 Ethical and practical considerations for technology-enabled parenting solutions**

971 At the same time as suggesting opportunities for the design of parenting support, we are aware of the need to carefully
972 consider the ethical implications and potential unintended effects of any such system that, by definition, attempts to
973 impact some of the most personal and private relationships in the parents’ lives. Considerate ethical design—such as that
974 following responsible innovation practices [68, 132]—drawing on user-centred design work with all the stakeholders
975 including the children will be crucial (cf., also [10, 11, 47]).
976

977 We would also like to highlight that while many of the child-behaviour driven challenges are amenable to changes in
978 parenting approaches (and thus could be seen as as ‘inherently solvable’), many are not and the emerging critiques around
979 the combination of reduced local community support combined with the push of placing most, if not all, responsibility on
980 families (rather than society) are another important design consideration (see [12, 87, 88, 101] for detailed arguments);
981 with a range of potential foci, from the aims to directly support parents where they are at, to broader activism through
982 design (cf., [81]).
983

984 We note that none of the suggestions in section 6.1.3 is a clear ‘solution’ to the problems we outline – much further
985 empirical and design work is needed to understand how instrumental support could be offered in the context of online fora
986
987
988

989 for such parenting needs. We propose that the identified research directions offer three possible and plausible agendas
990 for future parenting fora design research that is informed by parenting programme best practice, and involves parents,
991 children and psychology experts in envisaging their application. Moreover, while each of the directions sketched above
992 could be explored individually, the underlying intervention mechanisms could also be used in combination: for example,
993 one could imagine a widely accessible parenting programme, enabling crowd-sourced peer support through online fora
994 whilst also offering in-the-moment parenting support through IoT-driven systems.
995

996 More broadly, there is so far very little work that would connect the deep knowledge base from parenting intervention
997 psychology with the design thinking and innovation in HCI. The field appears ripe for such innovation: many of the
998 developers of traditional parenting programs are slowly transitioning their programs to online spaces albeit staying so far
999 very close to the tried-and-tested intervention models (e.g., video based modules, traditional online peer support fora) –
1000 providing both excellent baseline systems to innovate on, as well as initial evidence of where/how traditional models
1001 might fall short. As researchers, intervention developers, and designers we are excited by these possibilities, which could
1002 help envision entirely new models for supporting parents in developing what most strive for: close, emotionally-strong
1003 relationships with their children that also empower their children to grow into happy and well-adjusted adults.
1004

1007 7 CONCLUSION

1009 This paper presents an empirical and a design contribution to the existing body of HCI work investigating how parents seek
1010 and receive help online. By focusing on parent concerns for complex child behaviour in 2-5 yo and associated emotion,
1011 we highlight an important but to date under-researched parenting support area; one that—as our data suggests—faces a
1012 bespoke set of challenges for receiving online support. We combine (i) the qualitative analysis of 1 year of fora posts from
1013 a well established UK parenting site to understand and identify existing needs and challenges (i.e., active problem solving
1014 and the associated information-to-application gap); with (ii) the extensive literature on traditional parenting interventions
1015 and HCI work in other domains to suggest a series of design directions that could start addressing these difficulties
1016 through user-centred design work.
1017
1018

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1022

1024 REFERENCES

- 1025 [1] Barbara H. Fiese and Ross D. Parke (Eds.). 2002. Introduction to the special section on family routines and rituals. *Journal of Family Psychology* 16, 4
1026 (2002), 379–380. DOI: <http://dx.doi.org/10.1037/0893-3200.16.4.379> Place: US Publisher: American Psychological Association.
- 1027 [2] Tawfiq Ammari, Meredith Ringel Morris, and Sarita Yardi Schoenebeck. 2014. Accessing Social Support and Overcoming Judgment on Social Media
1028 among Parents of Children with Special Needs. In *Eights International AAAI Conference on Weblogs and Social Media*. 22–31.
- 1029 [3] Tawfiq Ammari and Sarita Schoenebeck. 2015a. Networked empowerment on facebook among parents of children with special needs. *Conference on*
1030 *Human Factors in Computing Systems - Proceedings 2015-April (2015)*, 2805–2814. DOI: <http://dx.doi.org/10.1145/2702123.2702324>
- 1031 [4] Tawfiq Ammari and Sarita Schoenebeck. 2015b. Understanding and supporting fathers and fatherhood on social media sites. *Conference on Human*
1032 *Factors in Computing Systems - Proceedings 2015-April (2015)*, 1905–1914. DOI: <http://dx.doi.org/10.1145/2702123.2702205>
- 1033 [5] Tawfiq Ammari, Sarita Schoenebeck, and Daniel M. Romero. 2018. Pseudonymous Parents. (2018), 1–13. DOI: <http://dx.doi.org/10.1145/3173574.3174063>
- 1034 [6] Nazanin Andalibi and Andrea Forte. 2018. Announcing Pregnancy Loss on Facebook. In *Proceedings of the 2018 CHI Conference on Human Factors*
1035 *in Computing Systems*. ACM, New York, NY, USA, 1–14. DOI: <http://dx.doi.org/10.1145/3173574.3173732>
- 1036 [7] Nazanin Andalibi and Patricia Garcia. 2021. Sensemaking and Coping After Pregnancy Loss: The Seeking and Disruption of Emotional Validation
1037 Online. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (April 2021), 127:1–127:32. DOI: <http://dx.doi.org/10.1145/3449201>
- 1038 [8] Nazanin Andalibi, Oliver L. Haimson, Munmun De Choudhury, and Andrea Forte. 2018. Social support, reciprocity, and anonymity in responses to
1039 sexual abuse disclosures on social media. *ACM Transactions on Computer-Human Interaction* 25, 5 (2018). DOI: <http://dx.doi.org/10.1145/3234942>

- 1041 [9] Nazanin Andalibi, Pinar Ozturk, and Andrea Forte. 2017. Sensitive self-disclosures, responses, and social support on instagram: The case of
1042 #depression. *Proceedings of the ACM Conference on Computer Supported Cooperative Work, CSCW (2017)*, 1485–1500. DOI: <http://dx.doi.org/10.1145/2998181.2998243>
- 1043 [10] Alissa N. Antle, Christopher Frauenberger, Monica Landoni, Jerry Alan Fails, Marina Jirotko, Helena Webb, and Nalin Tutiyaiphuengprasert. 2020.
1044 Emergent, situated and prospective ethics for child-computer interaction research. In *Proceedings of the 2020 ACM Interaction Design and Children*
1045 *Conference: Extended Abstracts*. ACM, New York, NY, USA, 54–61. DOI: <http://dx.doi.org/10.1145/3397617.3398058>
- 1046 [11] Alissa N. Antle and Juan Pablo Hourcade. 2021. Research in Child-Computer Interaction: Provocations and envisioning future directions. *International*
1047 *Journal of Child-Computer Interaction* (8 2021), 100374. DOI: <http://dx.doi.org/10.1016/j.ijcci.2021.100374>
- 1048 [12] Terry Arendell. 2000. Conceiving and investigating motherhood: The decade's scholarship. *Journal of Marriage and Family* 62, 4 (2000), 1192–1207.
1049 DOI: <http://dx.doi.org/10.1111/j.1741-3737.2000.01192.x>
- 1050 [13] Sabine Baker, Matthew R. Sanders, and Alina Morawska. 2017. Who Uses Online Parenting Support? A Cross-Sectional Survey Exploring Australian
1051 Parents' Internet Use for Parenting. *Journal of Child and Family Studies* 26, 3 (2017), 916–927. DOI: <http://dx.doi.org/10.1007/s10826-016-0608-1>
- 1052 [14] Monica J. Barratt. 2011. Discussing illicit drugs in public internet forums. In *Proceedings of the 5th International Conference on Communities and*
1053 *Technologies - C&T '11*. ACM Press, New York, New York, USA, 159. DOI: <http://dx.doi.org/10.1145/2103354.2103376>
- 1054 [15] Erin Beneteau, Ashley Boone, Yuxing Wu, Julie A. Kientz, Jason Yip, and Alexis Hiniker. 2020. Parenting with Alexa: Exploring the Introduction of
1055 Smart Speakers on Family Dynamics. *Conference on Human Factors in Computing Systems - Proceedings (2020)*, 1–13. DOI: <http://dx.doi.org/10.1145/3313831.3376344>
- 1056 [16] Jay M. Bernhardt and Elizabeth M. Felter. 2004. Online pediatric information seeking among mothers of young children: Results from a qualitative
1057 study using focus groups. *Journal of Medical Internet Research* 6, 1 (2004), 83–98. DOI: <http://dx.doi.org/10.2196/jmir.6.1.e7>
- 1058 [17] Göran Bolin and Julia Velkova. 2020. Audience-metric continuity? Approaching the meaning of measurement in the digital everyday. *Media, Culture*
1059 *& Society* 42, 7-8 (Oct. 2020), 1193–1209. DOI: <http://dx.doi.org/10.1177/0163443720907017> Publisher: SAGE Publications Ltd.
- 1060 [18] Katya Borgos-Rodriguez, Kathryn E. Ringland, and Anne Marie Piper. 2019. Myautsomefamilylife: Analyzing parents of children with developmental
1061 disabilities on YouTube. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (2019). DOI: <http://dx.doi.org/10.1145/3359196>
- 1062 [19] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101.
1063 <http://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa>
- 1064 [20] Amy Bruckman. 2002. Studying the amateur artist: A perspective on disguising data collected in human subjects research on the Internet. *Ethics and*
1065 *Information Technology* 4, 3 (Sept. 2002), 217–231. DOI: <http://dx.doi.org/10.1023/A:1021316409277>
- 1066 [21] Grace Burleson, Mustafa Naseem, and Kentaro Toyama. 2020. An Exploration of African-American Pregnant Women's Information-Seeking Behavior
1067 in Detroit. In *Proceedings of the 2020 International Conference on Information and Communication Technologies and Development (ICTD2020)*.
Association for Computing Machinery, New York, NY, USA, 1–12. DOI: <http://dx.doi.org/10.1145/3392561.3394647>
- 1068 [22] Susan B Campbell. 2016. Developmental Psychopathology Perspective. January 2008 (2016).
- 1069 [23] Anil Chacko, Scott A. Jensen, Lynda S. Lowry, Melinda Cornwell, Alyssa Chimklis, Elizabeth Chan, Daniel Lee, and Brenda Pulgarin. 2016.
1070 Engagement in Behavioral Parent Training: Review of the Literature and Implications for Practice. *Clinical Child and Family Psychology Review* 19, 3
1071 (Sept. 2016), 204–215. DOI: <http://dx.doi.org/10.1007/s10567-016-0205-2>
- 1072 [24] Charlotte Chalklen and Heather Anderson. 2017. Mothering on Facebook: Exploring the Privacy/Openness Paradox. *Social Media + Society* 3, 2
1073 (April 2017), 2056305117707187. DOI: <http://dx.doi.org/10.1177/2056305117707187> Publisher: SAGE Publications Ltd.
- 1074 [25] Mary A. Chiariello and Helen Orvaschel. 1995. Patterns of parent-child communication: Relationship to depression. *Clinical Psychology Review* 15, 5
1075 (Jan. 1995), 395–407. DOI: [http://dx.doi.org/10.1016/0272-7358\(95\)00022-H](http://dx.doi.org/10.1016/0272-7358(95)00022-H)
- 1076 [26] Dana C. Childress. 2004. Special Instruction and Natural Environments: Best Practices in Early Intervention. *Infants & Young Children* 17, 2 (June
1077 2004), 162. https://journals.lww.com/iyjournal/abstract/2004/04000/special_instruction_and_natural_environments__best.7.aspx
- 1078 [27] Linda K. Cordisco, Phillip S. Strain, and Nancy Depew. 1988. Assessment for Generalization of Parenting Skills in Home Settings. *Journal of the*
1079 *Association for Persons with Severe Handicaps* 13, 3 (Sept. 1988), 202–210. DOI: <http://dx.doi.org/10.1177/154079698801300311> Publisher: SAGE
Publications.
- 1080 [28] Kathrin M Cresswell, Ann Blandford, and Aziz Sheikh. 2017. Drawing on human factors engineering to evaluate the effectiveness of health information
1081 technology. *Journal of the Royal Society of Medicine* 110, 8 (2017), 309–315. DOI: <http://dx.doi.org/10.1177/0141076817712252>
- 1082 [29] Lauren Croucher, Elif Mertan, Roz Shafran, and Sophie D Bennett. 2020. The Use of Mumsnet by Parents of Young People With Mental Health
1083 Needs: Qualitative Investigation. *JMIR Mental Health* 7, 9 (9 2020), e18271. DOI: <http://dx.doi.org/10.2196/18271>
- 1084 [30] Munmun De Choudhury and Sushovan De. 2014. Mental health discourse on reddit: Self-disclosure, social support, and anonymity. In *Eighth*
1085 *international AAAI conference on weblogs and social media*.
- 1086 [31] Kirby Deater-Deckard, Zhe Wang, Nan Chen, and Martha Ann Bell. 2012. Maternal executive function, harsh parenting, and child conduct
1087 problems. *Journal of Child Psychology and Psychiatry* 53, 10 (2012), 1084–1091. DOI: <http://dx.doi.org/10.1111/j.1469-7610.2012.02582.x>
<https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1469-7610.2012.02582.x>.
- 1088 [32] Betsy Disalvo. 2016. Participatory Design through a Learning Science Lens. *Proceedings of the SIGCHI Conference on Human Factors in Computing*
1089 *Systems (2016)*, 4459–4463. DOI: <http://dx.doi.org/10.1145/2858036.2858405>
- 1090 [33] Theodore Dix. 1991. The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin* 110, 1 (1991), 3–25. DOI:
1091 <http://dx.doi.org/10.1037/0033-2909.110.1.3> Place: US Publisher: American Psychological Association.

- 1093 [34] Snezhana Djambazova-Popordanoska. 2016. Implications of emotion regulation on young children’s emotional wellbeing and educational achieve-
1094 ment. *Educational Review* 68, 4 (Oct. 2016), 497–515. DOI: <http://dx.doi.org/10.1080/00131911.2016.1144559> Publisher: Routledge _eprint:
1095 <https://doi.org/10.1080/00131911.2016.1144559>.
- 1096 [35] Jennifer L. Doty and Jodi Dworkin. 2014a. Online Social Support for Parents: A Critical Review. *Marriage & Family Review* 50, 2 (March 2014),
1097 174–198. DOI: <http://dx.doi.org/10.1080/01494929.2013.834027> Publisher: Routledge _eprint: <https://doi.org/10.1080/01494929.2013.834027>.
- 1098 [36] Jennifer L. Doty and Jodi Dworkin. 2014b. Online Social Support for Parents: A Critical Review. *Marriage and Family Review* 50, 2 (2014), 174–198.
1099 DOI: <http://dx.doi.org/10.1080/01494929.2013.834027>
- 1100 [37] Emma Doyle. 2013. Seeking advice about children’s health in an online parenting forum. *Medical Sociology online* 7, 3 (2013), 17–27.
- 1101 [38] Duggan, Maeve, Amanda Lenhart, Lampe, Cliff, and Ellison, Nicole. 2015. Parents and Social Media. (July 2015). [https://www.pewresearch.org/
1102 internet/2015/07/16/parents-and-social-media/](https://www.pewresearch.org/internet/2015/07/16/parents-and-social-media/)
- 1103 [39] Melissa E. Duncombe, Sophie S. Havighurst, Christiane E. Kehoe, Kerry A. Holland, Emma J. Frankling, and Robyn Stargatt. 2016. Comparing an
1104 Emotion- and a Behavior-Focused Parenting Program as Part of a Multisystemic Intervention for Child Conduct Problems. *Journal of Clinical Child &
1105 Adolescent Psychology* 45, 3 (5 2016), 320–334. DOI: <http://dx.doi.org/10.1080/15374416.2014.963855>
- 1106 [40] Jodi Dworkin, Jessica Connell, and Jennifer Doty. 2013. A literature review of parents’ online behavior. *Cyberpsychology: Journal of Psychosocial
1107 Research on Cyberspace* 7, 2 (July 2013). DOI: <http://dx.doi.org/10.5817/CP2013-2-2>
- 1108 [41] Laura Elwell, Sarah Grogan, and Neil Coulson. 2011. Adolescents living with cancer: The role of computer-mediated support groups. *Journal of
1109 Health Psychology* 16, 2 (2011), 236–248. DOI: <http://dx.doi.org/10.1177/1359105310371398>
- 1110 [42] Daniel A. Epstein, Clara Caldeira, Mayara Costa Figueiredo, Xi Lu, Lucas M. Silva, Lucretia Williams, Jong Ho Lee, Qingyang Li, Simran
1111 Ahuja, Qiu Chen, Payam Dowlatyari, Craig Hilby, Sazedha Sultana, Elizabeth V. Eikey, and Yunan Chen. 2020. Mapping and Taking Stock of
1112 the Personal Informatics Literature. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 4, 4 (2020). DOI:
1113 <http://dx.doi.org/10.1145/3432231>
- 1114 [43] Sarah Evans, Katie Davis, Abigail Evans, Julie Ann Campbell, David P. Randall, Kodlee Yin, and Cecilia Aragon. 2017. More Than Peer Production.
1115 In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. ACM, New York, NY, USA, 259–272.
1116 DOI: <http://dx.doi.org/10.1145/2998181.2998342>
- 1117 [44] Sheila M. Eyberg and Elizabeth A. Robinson. 1982. Parent-child interaction training: Effects on family functioning. *Journal of Clin-
1118 ical Child Psychology* 11, 2 (June 1982), 130–137. DOI: <http://dx.doi.org/10.1080/15374418209533076> Publisher: Routledge _eprint:
1119 <https://doi.org/10.1080/15374418209533076>.
- 1120 [45] Casey Fiesler and Nicholas Proferes. 2018. “Participant” Perceptions of Twitter Research Ethics. *Social Media + Society* 4, 1 (Jan. 2018),
1121 2056305118763366. DOI: <http://dx.doi.org/10.1177/2056305118763366> Publisher: SAGE Publications Ltd.
- 1122 [46] Juan M. Fluja-Contreras, Azucena García-Palacios, and Inmaculada Gómez. 2019. Technology-based parenting interventions for children’s
1123 physical and psychological health: a systematic review and meta-analysis. *Psychological Medicine* 49, 11 (8 2019), 1787–1798. DOI: <http://dx.doi.org/10.1017/S0033291719000692>
- 1124 [47] Christopher Frauenberger, Monica Landoni, Jerry Alan Fails, Janet C. Read, Alissa N. Antle, and Pauline Gourlet. 2019. Broadening the Discussion of
1125 Ethics in the Interaction Design and Children Community. In *Proceedings of the 18th ACM International Conference on Interaction Design and
1126 Children*. ACM, New York, NY, USA, 3–7. DOI: <http://dx.doi.org/10.1145/3311927.3331886>
- 1127 [48] Richenda Gambles. 2010. Going public? Articulations of the personal and political on Mumsnet. com. In *Rethinking the public: Innovations in
1128 research, theory and politics*. Policy Press Bristol, 29–42.
- 1129 [49] Yujia Gao, Jinu Jang, and Diyi Yang. 2021. Understanding the Usage of Online Media for Parenting from Infancy to Preschool At Scale. In *Proceedings
1130 of the 2021 CHI Conference on Human Factors in Computing Systems (CHI ’21)*. Association for Computing Machinery, New York, NY, USA, 1–12.
1131 DOI: <http://dx.doi.org/10.1145/3411764.3445203>
- 1132 [50] Frances Gardner and Patty Leijten. 2017. Incredible Years parenting interventions: current effectiveness research and future directions. *Current
1133 Opinion in Psychology* 15, 16 (2017), 99–104. DOI: <http://dx.doi.org/10.1016/j.copsyc.2017.02.023>
- 1134 [51] Frances Gardner, Patty Leijten, G. J. Melendez-Torres, Sabine Landau, Victoria Harris, Joanna Mann, Jennifer Beecham, Judy Hutchings, and Stephen
1135 Scott. 2019. The Earlier the Better? Individual Participant Data and Traditional Meta-analysis of Age Effects of Parenting Interventions. *Child
1136 Development* 90, 1 (2019), 7–19. DOI: <http://dx.doi.org/10.1111/cdev.13138>
- 1137 [52] Radhika Garg, Yash Kapadia, and Subhasree Sengupta. 2021. Using the Lenses of Emotion and Support to Understand Unemployment Discourse on
1138 Reddit. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (April 2021), 14:1–14:24. DOI: <http://dx.doi.org/10.1145/3449088>
- 1139 [53] Lorna Gibson and Vicki L. Hanson. 2013. Digital motherhood: how does technology help new mothers?. In *Proceedings of the SIGCHI Conference on
1140 Human Factors in Computing Systems*. ACM, New York, NY, USA, 313–322. DOI: <http://dx.doi.org/10.1145/2470654.2470700>
- 1141 [54] Danielle M. Gleeson, Alison Craswell, and Christian M. Jones. 2019. Women’s use of social networking sites related to childbearing: An integrative
1142 review. *Women and Birth* 32, 4 (2019), 294–302. DOI: <http://dx.doi.org/10.1016/j.wombi.2018.10.010>
- 1143 [55] Alison Gopnik. 2016. *The gardener and the carpenter: What the new science of child development tells us about the relationship between parents and
1144 children*. Macmillan.
- 1145 [56] John M Gottman, Lynn Fainsilber Katz, and Carole Hooven. 1996. Parental meta-emotion philosophy and the emotional life of families: Theoretical
1146 models and preliminary data. *Journal of Family Psychology* 10, 3 (1996), 243.
- 1147 [57] John Mordechai Gottman, Lynn Fainsilber Katz, and Carole Hooven. 2013. *Meta-emotion: how families communicate emotionally*. Routledge Taylor

- 1145 & Francis Group, London New York.
- 1146 [58] Devon Greyson, Cathy Chabot, Caroline Mniszak, and Jean A Shoveller. 2023. Social media and online safety practices of young parents. *Journal of*
1147 *Information Science* 49, 5 (Oct. 2023), 1344–1357. DOI: <http://dx.doi.org/10.1177/01655515211053808> Publisher: SAGE Publications Ltd.
- 1148 [59] Joan E. Grusec. 2011. Socialization Processes in the Family: Social and Emotional Development. *Annual Review of Psychology* 62, 1 (1 2011),
1149 243–269. DOI: <http://dx.doi.org/10.1146/annurev.psych.121208.131650>
- 1150 [60] Sophie S. Havighurst, Melissa Duncombe, Emma Frankling, Kerry Holland, Christiane Kehoe, and Robyn Stargatt. 2015. An Emotion-Focused
1151 Early Intervention for Children with Emerging Conduct Problems. *Journal of Abnormal Child Psychology* 43, 4 (2015), 749–760. DOI: <http://dx.doi.org/10.1007/s10802-014-9944-z>
- 1152 [61] Sophie S. Havighurst, Alessandra Radovini, Brandon Hao, and Christiane E. Kehoe. 2020. Emotion-focused parenting interventions for prevention
1153 and treatment of child and adolescent mental health problems: a review of recent literature. *Current Opinion in Psychiatry* 33, 6 (Nov. 2020), 586–601.
1154 DOI: <http://dx.doi.org/10.1097/YCO.0000000000000647>
- 1155 [62] Sophie S. Havighurst, Katherine R. Wilson, Ann E. Harley, and Margot R. Prior. 2009a. Tuning in to kids: an emotion-focused parenting
1156 program—initial findings from a community trial. *Journal of Community Psychology* 37, 8 (2009), 1008–1023. DOI: <http://dx.doi.org/10.1002/jcop.20345>
1157 _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/jcop.20345>.
- 1158 [63] Sophie S Havighurst, Katherine R Wilson, Ann E Harley, Margot R Prior, and others. 2009b. Tuning in to kids: An emotion-focused parenting
1159 program—initial findings from a community trial. *Journal of Community Psychology* 37, 8 (2009), 1008–1023.
- 1160 [64] Alexis Hiniker, Sharon S. Heung, Sungsoo (Ray) Hong, and Julie A. Kientz. 2018. Coco's Videos. In *Proceedings of the 2018 CHI Conference on*
1161 *Human Factors in Computing Systems*. ACM, New York, NY, USA, 1–13. DOI: <http://dx.doi.org/10.1145/3173574.3173828>
- 1162 [65] Alison Hooper, Claire Schweiker, and Cailin Kerch. 2023. Social support in a parenting Facebook group during the COVID-19 pandemic. *Family*
1163 *Relations* 72, 2 (2023), 530–546. DOI: <http://dx.doi.org/10.1111/fare.12804> _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/fare.12804>.
- 1164 [66] Bernd Huber, Richard F. Davis, Allison Cotter, Emily Junkin, Mindy Yard, Stuart Shieber, Elizabeth Brestan-Knight, and Krzysztof Z. Gajos.
1165 2019. SpecialTime: Automatically Detecting Dialogue Acts from Speech to Support Parent-Child Interaction Therapy. In *Proceedings of the*
1166 *13th EAI International Conference on Pervasive Computing Technologies for Healthcare*. ACM, New York, NY, USA, 139–148. DOI: <http://dx.doi.org/10.1145/3329189.3329203>
- 1167 [67] Claire Hughes, Rory T. Devine, Judi Mesman, and Clancy Blair. 2020. Understanding the terrible twos: A longitudinal investigation of the impact
1168 of early executive function and parent–child interactions. *Developmental Science* 23, 6 (2020), e12979. DOI: <http://dx.doi.org/10.1111/desc.12979>
1169 _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/desc.12979>.
- 1170 [68] Marina Jirotko, Barbara Grimpe, Bernd Stahl, Grace Eden, and Mark Hartwood. 2017. Responsible research and innovation in the digital age.
1171 *Commun. ACM* 60, 5 (2017), 62–68.
- 1172 [69] Ravi Karkar, Jasmine Zia, Jessica Schroeder, Daniel A. Epstein, Laura R. Pina, Jeffrey Scofield, James Fogarty, Julie A. Kientz, Sean A. Munson, and
1173 Roger Vilardaga. 2017. TummyTrials: A Feasibility Study of Using Self-Experimentation to Detect Individualized Food Triggers. *Proceedings of the*
1174 *2017 CHI Conference on Human Factors in Computing Systems - CHI '17* (2017), 6850–6863. DOI: <http://dx.doi.org/10.1145/3025453.3025480>
- 1175 [70] Alan E Kazdin. 2008. *Parent management training: Treatment for oppositional, aggressive, and antisocial behavior in children and adolescents*.
1176 Oxford University Press.
- 1177 [71] Alan E Kazdin. 2018. Developing Treatments for Antisocial Behavior Among Children : Controlled Trials and Uncontrolled Tribulations. *Perspectives*
1178 *on Psychological Science* 13, 5 (2018), 634–650. DOI: <http://dx.doi.org/10.1177/1745691618767880>
- 1179 [72] Katherine Jennifer Kelly, Shelley Doucet, Alison Luke, Rima Azar, and William Montelpare. 2022. Experiences, Motivations, and Perceived Impact
1180 of Participation in a Facebook-Based Support Group for Caregivers of Children and Youth With Complex Care Needs: Qualitative Descriptive Study.
1181 *JMIR Pediatrics and Parenting* 5, 3 (July 2022), e33172. DOI: <http://dx.doi.org/10.2196/33172> Company: JMIR Pediatrics and Parenting Distributor:
1182 JMIR Pediatrics and Parenting Institution: JMIR Pediatrics and Parenting Label: JMIR Pediatrics and Parenting Publisher: JMIR Publications Inc.,
1183 Toronto, Canada.
- 1184 [73] Joanna J. Kim, Nancy A. Gonzales, Hardian Thamrin, Anne Mauricio, Mary Kuckertz, and Daisy Camacho-Thompson. 2021. What got in
1185 the way? Caregiver-reported challenges to home practice of assigned intervention skills. *Implementation Research and Practice* 2 (Jan. 2021),
1186 26334895211055994. DOI: <http://dx.doi.org/10.1177/26334895211055994> Publisher: SAGE Publications.
- 1187 [74] M.K. Kim, S. Druga, S. Esmaili, J. Woodward, A. Shaw, A. Jain, J. Langham, K. Hollingshead, S.B. Lovato, E. Beneteau, J. Ruiz, L. Anthony, and A.
1188 Hiniker. 2022. Examining voice assistants in the context of children's speech. *International Journal of Child-Computer Interaction* 34 (2022). DOI:
1189 <http://dx.doi.org/10.1016/j.ijcci.2022.100540>
- 1190 [75] Susan Kirk and Linda Milnes. 2016. An exploration of how young people and parents use online support in the context of living with cystic fibrosis.
1191 *Health Expectations* 19, 2 (4 2016), 309–321. DOI: <http://dx.doi.org/10.1111/hex.12352>
- 1192 [76] Predrag Klasnja, Eric B. Hekler, Elizabeth V. Korinek, John Harlow, and Sonali R. Mishra. 2017. Toward Usable Evidence. (2017), 3071–3082. DOI:
1193 <http://dx.doi.org/10.1145/3025453.3026013>
- 1194 [77] Kyong-Ah Kwon, Suejung Han, Hyun-Joo Jeon, and Gary E. Bingham. 2013. Mothers' and fathers' parenting challenges, strategies, and resources in
1195 toddlerhood. *Early Child Development and Care* 183, 3–4 (April 2013), 415–429. DOI: <http://dx.doi.org/10.1080/03004430.2012.711591> Publisher:
1196 Routledge _eprint: <https://doi.org/10.1080/03004430.2012.711591>.
- 1197 [78] Susan H. Landry, Cynthia L. Miller-Loncar, Karen E. Smith, and Paul R. Swank. 2002. The Role of Early Parenting in Children's Development of
1198 Executive Processes. *Developmental Neuropsychology* 21, 1 (Feb. 2002), 15–41. DOI: http://dx.doi.org/10.1207/S15326942DN2101_2 Publisher:

- 1197 Routledge _eprint: https://doi.org/10.1207/S15326942DN2101_2.
- 1198 [79] Aideen Lawlor and Jurek Kirakowski. 2014. Online support groups for mental health: A space for challenging self-stigma or a means of social
1199 avoidance? *Computers in Human Behavior* 32 (3 2014), 152–161. DOI: <http://dx.doi.org/10.1016/j.chb.2013.11.015>
- 1200 [80] Amanda Lazar, Norman Makoto Su, Jeffrey Bardzell, and Shaowen Bardzell. 2019. Parting the Red Sea: Sociotechnical systems and lived experiences
1201 of menopause. *Conference on Human Factors in Computing Systems - Proceedings* (2019), 1–16. DOI: <http://dx.doi.org/10.1145/3290605.3300710>
- 1202 [81] Debora de Castro Leal, Angelika Strohmayer, and Max Krüger. 2021. On activism and academia: Reflecting together and sharing experiences among
1203 critical friends. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. 1–18.
- 1204 [82] Cynthia N. Lebron, Sara M. St. George, Daphne G. Eckembrecher, and Lucia M. Alvarez. 2019. “Am I doing this wrong?” Breastfeeding mothers’ use
1205 of an online forum. *Maternal and Child Nutrition* August 2019 (2019), 1–10. DOI: <http://dx.doi.org/10.1111/mcn.12890>
- 1206 [83] R Lederman, G Wadley, J Gleeson, Bendall Sarah, and Mario Alvarez-Jimenez. 2014. Moderated online social therapy: Designing and evaluating
1207 technology for mental health. *ACM Transactions on ...* 21, 1 (2014), 1–26. <http://dl.acm.org/citation.cfm?id=2513179>
- 1208 [84] Sonia Livingstone and Alicia Blum-Ross. 2017. Researching children and childhood in the digital age. In *Research with Children: Perspectives and
1209 Practices: Third Edition*, P. Christensen and A James (Eds.). 1–231. DOI: <http://dx.doi.org/10.4324/9781315657349>
- 1210 [85] Sonia Livingstone and Jasmina Byrne. 2018. Parenting in the digital age : The challenges of parental responsibility in comparative perspective.
1211 Nordicom, University of Gothenburg, 19–30. <https://urn.kb.se/resolve?urn=urn:nbn:se:norden:org:diva-12015>
- 1212 [86] Deborah Lupton. 2016. The use and value of digital media for information about pregnancy and early motherhood: A focus group study. *BMC
1213 Pregnancy and Childbirth* 16, 1 (2016), 1–10. DOI: <http://dx.doi.org/10.1186/s12884-016-0971-3>
- 1214 [87] Deborah Lupton, Sarah Pedersen, and Gareth M. Thomas. 2016. Parenting and Digital Media: From the Early Web to Contemporary Digital Society.
1215 *Sociology Compass* 10, 8 (2016), 730–743. DOI: <http://dx.doi.org/10.1111/soc4.12398>
- 1216 [88] Clare Madge and Henrietta O’Connor. 2006. Parenting gone wired: Empowerment of new mothers on the internet? *Social and Cultural Geography* 7,
1217 2 (2006), 199–220. DOI: <http://dx.doi.org/10.1080/14649360600600528>
- 1218 [89] Diane Maloney-Krichmar and Jenny Preece. 2005. A multilevel analysis of sociability, usability, and community dynamics in an online health
1219 community. *ACM Transactions on Computer-Human Interaction* 12, 2 (2005), 201–232. DOI: <http://dx.doi.org/10.1145/1067860.1067864>
- 1220 [90] Lena Mamykina, Elizabeth Mynatt, Patricia Davidson, and Daniel Greenblatt. 2008. MAHI: investigation of social scaffolding for reflective thinking
1221 in diabetes management. In *CHI ’08*. ACM Press, New York, New York, USA, 477. DOI: <http://dx.doi.org/10.1145/1357054.1357131>
- 1222 [91] Brandon T. McDaniel, Sarah M. Coyne, and Erin K. Holmes. 2012. New mothers and media use: Associations between blogging, social networking,
1223 and maternal well-being. *Maternal and Child Health Journal* 16, 7 (2012), 1509–1517. DOI: <http://dx.doi.org/10.1007/s10995-011-0918-2>
- 1224 [92] Branden A. McLeod PhD, MSW. 2020. “Hello group, I need advice”: A Textual Analysis of Black Fathers’ Help-Seeking Posts on Facebook. *Family
1225 Relations* 69, 5 (2020), 944–955. DOI: <http://dx.doi.org/10.1111/fare.12500> _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/fare.12500>
- 1226 [93] Susan Michie, Lucy Yardley, Robert West, Kevin Patrick, and Felix Greaves. 2017. Developing and Evaluating Digital Interventions to Promote
1227 Behavior Change in Health and Health Care: Recommendations Resulting From an International Workshop. *Journal of medical Internet research* 19, 6
1228 (2017), e232. DOI: <http://dx.doi.org/10.2196/jmir.7126>
- 1229 [94] Sean A Munson, Jessica Schroeder, Ravi Karkar, Julie A Kientz, and Chia-fang Chung. 2020. The Importance of Starting With Goals in N-of-1
1230 Studies. 2, May (2020), 1–7. DOI: <http://dx.doi.org/10.3389/fdgth.2020.00003>
- 1231 [95] Mark W. Newman, Debra Lauterbach, Sean A. Munson, Paul Resnick, and Margaret E. Morris. 2011. It’s not that i don’t have problems, i’m just not
1232 putting them on facebook: challenges and opportunities in using online social networks for health. In *CSCW ’11*. ACM Press, New York, New York,
1233 USA, 341. DOI: <http://dx.doi.org/10.1145/1958824.1958876>
- 1234 [96] Christa C. Nieuwboer, Ruben G. Fukkink, and Jo M.A. Hermans. 2013. Online programs as tools to improve parenting: A meta-analytic review.
1235 *Children and Youth Services Review* 35, 11 (2013), 1823–1829. DOI: <http://dx.doi.org/10.1016/j.chilcyouth.2013.08.008>
- 1236 [97] UK Parliament. 2021. Draft Online Safety Bill (Joint Committee) - Summary - Committees - UK Parliament. (Dec. 2021). [https://committees.
1237 parliament.uk/writtenevidence/39118/pdf/](https://committees.parliament.uk/writtenevidence/39118/pdf/)
- 1238 [98] J. Patterson, C. Mockford, and S. Stewart-Brown. 2005. Parents’ perceptions of the value of the Webster-Stratton Parenting Programme: a qualitative
1239 study of a general practice based initiative. *Child: Care, Health and Development* 31, 1 (2005), 53–64. DOI: [http://dx.doi.org/10.1111/j.1365-
1240 2214.2005.00479.x](http://dx.doi.org/10.1111/j.1365-2214.2005.00479.x) _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1365-2214.2005.00479.x>.
- 1241 [99] Sarah Pedersen. 2015. ‘It Took a Lot to Admit I Am Male on Here’. Going Where Few Men Dare to Tread: Men on Mumsnet. In *Media, Margins and
1242 Popular Culture*. Springer, 249–261.
- 1243 [100] Sarah Pedersen. 2020. *The Politicization of Mumsnet*. Emerald Group Publishing.
- 1244 [101] Sarah Pedersen and Deborah Lupton. 2018. ‘What are you feeling right now?’ communities of maternal feeling on Mumsnet. *Emotion, Space and
1245 Society* 26 (2018), 57–63. DOI: <http://dx.doi.org/10.1016/j.emospa.2016.05.001>
- 1246 [102] Sarah Pedersen and Janet Smithson. 2013. Mothers with attitude — How the Mumsnet parenting forum offers space for new forms of femininity to
1247 emerge online. *Women’s Studies International Forum* 38 (5 2013), 97–106. DOI: <http://dx.doi.org/10.1016/j.wsif.2013.03.004>
- 1248 [103] Laura Pina, Kael Rowan, Asta Roseway, Paul Johns, Gillian R Hayes, and Mary Czerwinski. 2014. In Situ Cues for ADHD Parenting Strategies
Using Mobile Technology. In *8th International Conference on Pervasive Computing Technologies for Healthcare*. 17–24.
- [104] Laura R. Pina, Sang-Wha Sien, Teresa Ward, Jason C. Yip, Sean A. Munson, James Fogarty, and Julie A. Kientz. 2017. From Personal Informatics to
Family Informatics. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing*. ACM, New York,
NY, USA, 2300–2315. DOI: <http://dx.doi.org/10.1145/2998181.2998362>

- 1249 [105] Lars Plantin and Kristian Daneback. 2009. Parenthood, information and support on the internet. A literature review of research on parents and
1250 professionals online. *BMC Family Practice* 10 (2009), 1–12. DOI: <http://dx.doi.org/10.1186/1471-2296-10-34>
- 1251 [106] Martin Porcheron, Joel E Fischer, Stuart Reeves, and Sarah Sharples. 2018. Voice Interfaces in Everyday Life. *Proceedings of the 2018 ACM*
1252 *Conference on Human Factors in Computing Systems* (2018). DOI: <http://dx.doi.org/doi.org/10.1145/3173574.3174214>
- 1253 [107] Julie Prescott, Terry Hanley, and Katalin Ujhelyi. 2017. Peer communication in online mental health forums for young people: Directional and
1254 nondirectional support. *JMIR Mental Health* 4, 3 (2017). DOI: <http://dx.doi.org/10.2196/mental.6921>
- 1255 [108] Hayes Raffle, Mirjana Spasojevic, Rafael Ballagas, Glenda Revelle, Hiroshi Horii, Sean Follmer, Janet Go, Emily Reardon, Koichi Mori, and
1256 Joseph Kaye. 2010. Family story play: reading with young children (and elmo) over a distance. In *CHI '10*. ACM Press, 1583. DOI: <http://dx.doi.org/10.1145/1753326.1753563>
- 1257 [109] Alistair Cooper Redfern, Sheila. 2015. *Reflective Parenting: A Guide to Understanding What's Going on in Your Child's Mind*. Routledge, London.
1258 DOI: <http://dx.doi.org/10.4324/9781315764108>
- 1259 [110] Herman Saksono, Carmen Castaneda-Sceppa, Jessica Hoffman, Vivien Morris, Magy Seif El-Nasr, and Andrea G. Parker. 2020. Storywell: Designing
1260 for Family Fitness App Motivation by Using Social Rewards and Reflection. *Conference on Human Factors in Computing Systems - Proceedings*
1261 (2020). DOI: <http://dx.doi.org/10.1145/3313831.3376686>
- 1262 [111] Matthew R. Sanders. 2008. Triple P-Positive Parenting Program as a public health approach to strengthening parenting. *Journal of Family Psychology*
1263 22, 4 (2008), 506–517. DOI: <http://dx.doi.org/10.1037/0893-3200.22.3.506> Place: US Publisher: American Psychological Association.
- 1264 [112] Matthew R. Sanders. 2012a. Development, Evaluation, and Multinational Dissemination of the Triple P-Positive Parenting Program. *Annual Review of*
1265 *Clinical Psychology* 8, 1 (2012), 345–379. DOI: <http://dx.doi.org/10.1146/annurev-clinpsy-032511-143104> _eprint: <https://doi.org/10.1146/annurev-clinpsy-032511-143104>
- 1266 [113] Matthew R. Sanders. 2012b. Development, Evaluation, and Multinational Dissemination of the Triple P-Positive Parenting Program. *Annual Review*
1267 *of Clinical Psychology* 8, 1 (2012), 345–379. DOI: <http://dx.doi.org/10.1146/annurev-clinpsy-032511-143104>
- 1268 [114] Anna Sarkadi and S. Bremberg. 2005. Socially unbiased parenting support on the internet: A cross-sectional study of users of a large Swedish
1269 parenting website. *Child: Care, Health and Development* 31, 1 (2005), 43–52. DOI: <http://dx.doi.org/10.1111/j.1365-2214.2005.00475.x>
- 1270 [115] Sarita Schoenebeck. 2013. The Secret Life of Online Moms: Anonymity and Disinhibition on YouBeMom.com. *Proceedings of the International*
1271 *AAAI Conference on Web and Social Media* 7, 1 (2013), 555–562. DOI: <http://dx.doi.org/10.1609/icwsm.v7i1.14379> Number: 1.
- 1272 [116] Jessica Schroeder, Ravi Karkar, Natalia Murinova, James Fogarty, and Sean A. Munson. 2019. Examining opportunities for goal-directed self-tracking
1273 to support chronic condition management. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 3, 4 (2019). DOI:
1274 <http://dx.doi.org/10.1145/3369809>
- 1275 [117] Melody Sepahpour-Fard and Michael Quayle. 2022. How Do Mothers and Fathers Talk About Parenting to Different Audiences? Stereotypes and
1276 Audience Effects: An Analysis of r/Daddit, r/Mommit, and r/Parenting Using Topic Modelling. In *Proceedings of the ACM Web Conference 2022*
1277 (WWW '22). Association for Computing Machinery, New York, NY, USA, 2696–2706. DOI: <http://dx.doi.org/10.1145/3485447.3512138>
- 1278 [118] Daniel S. Shaw, Richard Q. Bell, and Miles Gilliom. 2000. A truly early starter model of antisocial behavior revisited. *Clinical child and family*
1279 *psychology review* 3, 3 (2000), 155–172. DOI: <http://dx.doi.org/10.1023/A:1009599208790>
- 1280 [119] Elizabeth C. Shelleby and Daniel S. Shaw. 2014. Outcomes of Parenting Interventions for Child Conduct Problems: A Review of Differential
1281 Effectiveness. *Child Psychiatry & Human Development* 45, 5 (10 2014), 628–645. DOI: <http://dx.doi.org/10.1007/s10578-013-0431-5>
- 1282 [120] Magdalena Sjöberg and Simon Lindgren. 2017. Challenging the Roles of “Skilled” Professionals and “Risky” Young Mothers: Peer Support,
1283 Expertise, and Relational Patterns in Facebook Groups. *Journal of Technology in Human Services* 35, 3 (July 2017), 247–270. DOI: <http://dx.doi.org/10.1080/15228835.2017.1367350> Publisher: Routledge _eprint: <https://doi.org/10.1080/15228835.2017.1367350>.
- 1284 [121] Meredith M Skeels, Kenton T Unruh, Christopher Powell, and Wanda Pratt. 2010. Catalyzing Social Support for Breast Cancer Patients.. In *CHI '10*.
1285 ACM, 173–182. DOI: <http://dx.doi.org/10.1145/1753326.1753353>
- 1286 [122] Arietta Slade. 2005. Parental reflective functioning: An introduction. *Attachment & Human Development* 7, 3 (Sept. 2005), 269–281. DOI:
1287 <http://dx.doi.org/10.1080/14616730500245906> Publisher: Routledge _eprint: <https://doi.org/10.1080/14616730500245906>.
- 1288 [123] Petr Slovak and Geraldine Fitzpatrick. 2015. Teaching and developing social and emotional skills with technology. *ACM Transactions on*
1289 *Computer-Human Interaction (TOCHI)* 22, 4 (2015), 19.
- 1290 [124] Petr Slovak, Christopher Frauenberger, and Geraldine Fitzpatrick. 2017. Reflective Practicum. In *Proceedings of the 2017 CHI Conference on Human*
1291 *Factors in Computing Systems - CHI '17*, Vol. 2018-April. ACM Press, New York, New York, USA, 2696–2707. DOI: <http://dx.doi.org/10.1145/3025453.3025516>
- 1292 [125] Petr Slovák, Ran Gilad-Bachrach, and Geraldine Fitzpatrick. 2015. Designing Social and Emotional Skills Training. In *CHI '15*. ACM, 2797–2800.
1293 DOI: <http://dx.doi.org/10.1145/2702123.2702385>
- 1294 [126] Petr Slovak, Anja Thieme, Paul Tennent, Patrick Olivier, and Geraldine Fitzpatrick. 2015. On Becoming a Counsellor: Challenges and Opportunities
1295 To Support Interpersonal Skills Training. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work and Social Computing*.
1296 1336–1347.
- 1297 [127] Petr Slovák, Nikki Theofanopoulou, Alessia Cecchet, Peter Cottrell, Ferran Altarriba Bertran, Ella Dagan, Julian Childs, and Katherine Isbister.
1298 2018. "I just let him cry...: Designing Socio-Technical Interventions in Families to Prevent Mental Health Disorders. *Proceedings of the ACM on*
1299 *Human-Computer Interaction* 2, CSCW (Nov. 2018), 160:1–160:34. DOI: <http://dx.doi.org/10.1145/3274429>
- 1300 [128] Peter Smagorinsky. 2008. The Method Section as Conceptual Epicenter in Constructing Social Science Research Reports. *Written Communication*

- 1301 25, 3 (7 2008), 389–411. DOI: <http://dx.doi.org/10.1177/0741088308317815>
- 1302 [129] Judith G Smetana. 2017. Current research on parenting styles, dimensions, and beliefs. *Current Opinion in Psychology* 15 (June 2017), 19–25. DOI: <http://dx.doi.org/10.1016/j.copsyc.2017.02.012>
- 1303 [130] May-Britt Solem. 2013. Understanding Parenting as Situated in the Larger Sociocultural Context in Clinical Social Work. *Child and Adolescent Social Work Journal* 30, 1 (Feb. 2013), 61–78. DOI: <http://dx.doi.org/10.1007/s10560-012-0278-9>
- 1304 [131] Tobias Sonne, Jörg Müller, Paul Marshall, Carsten Obel, and Kaj Grønbaek. 2016. Changing Family Practices with Assistive Technology: MOBERO Improves Morning and Bedtime Routines for Children with ADHD. In *CHI'16*. ACM Press.
- 1305 [132] Bernd Carsten Stahl, Grace Eden, and Marina Jirotko. 2013. Responsible research and innovation in information and communication technology: Identifying and engaging with the ethical implications of ICTs. *Responsible innovation* (2013), 199–218.
- 1306 [133] Trevor F. Stokes and Donald M. Baer. 1977. An Implicit Technology of Generalization I. *Journal of Applied Behavior Analysis* 10, 2 (1977), 349–367. DOI: <http://dx.doi.org/10.1901/jaba.1977.10-349> _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1901/jaba.1977.10-349>
- 1307 [134] Gareth Terry, Nikki Hayfield, Victoria Clarke, and Virginia Braun. 2017. Thematic analysis. *The SAGE handbook of qualitative research in psychology* 2 (2017), 17–37.
- 1308 [135] Lisa Thomas, Elizabeth Sillence, Vicki Elsey, Emma Simpson, and Louise Moody. 2019. Technology to mediate role conflict in motherhood. *Conference on Human Factors in Computing Systems - Proceedings* (2019), 1–8. DOI: <http://dx.doi.org/10.1145/3290607.3299024>
- 1309 [136] Rae Thomas and Melanie J. Zimmer-Gembeck. 2007. Behavioral Outcomes of Parent-Child Interaction Therapy and Triple P—Positive Parenting Program: A Review and Meta-Analysis. *Journal of Abnormal Child Psychology* 35, 3 (June 2007), 475–495. DOI: <http://dx.doi.org/10.1007/s10802-007-9104-9>
- 1310 [137] Karin Thorslund, Jan Johansson Hanse, and Ulf Axberg. 2014. Universal parental support—How to reach out: A cross-sectional random sample of Swedish parents. *BMC Public Health* 14, 1 (2014), 1–8. DOI: <http://dx.doi.org/10.1186/1471-2458-14-1064>
- 1311 [138] Austin L. Toombs, Kellie Morrissey, Emma Simpson, Colin M. Gray, John Vines, and Madeline Balaam. 2018. Supporting the complex social lives of new parents. *Conference on Human Factors in Computing Systems - Proceedings* 2018-April (2018), 1–13. DOI: <http://dx.doi.org/10.1145/3173574.3173994>
- 1312 [139] Jessica Vitak, Nicholas Proferes, Katie Shilton, and Zahra Ashktorab. 2017. Ethics Regulation in Social Computing Research: Examining the Role of Institutional Review Boards. *Journal of Empirical Research on Human Research Ethics* 12, 5 (Dec. 2017), 372–382. DOI: <http://dx.doi.org/10.1177/1556264617725200> Publisher: SAGE Publications Inc.
- 1313 [140] C Webster-Stratton and M Hammond. 1997. Treating children with early-onset conduct problems: a comparison of child and parent training interventions. *Journal of consulting and clinical psychology* 65, 1 (1997), 93–109. DOI: <http://dx.doi.org/10.1037/0022-006X.65.1.93>
- 1314 [141] Karen A. Whittaker and Sarah Cowley. 2012. An effective programme is not enough: a review of factors associated with poor attendance and engagement with parenting support programmes. *Children & Society* 26, 2 (2012), 138–149. DOI: <http://dx.doi.org/10.1111/j.1099-0860.2010.00333.x> _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1099-0860.2010.00333.x>
- 1315 [142] Alfian Farizki Wicaksono and Sung-Hyon Myaeng. 2013. Automatic extraction of advice-revealing sentences for advice mining from online forums. In *Proceedings of the seventh international conference on Knowledge capture (K-CAP '13)*. Association for Computing Machinery, New York, NY, USA, 97–104. DOI: <http://dx.doi.org/10.1145/2479832.2479857>
- 1316 [143] Juan Xie, Zhe He, Gary Burnett, and Ying Cheng. 2021. How do mothers exchange parenting-related information in online communities? A meta-synthesis. *Computers in Human Behavior* 115 (Feb. 2021), 106631. DOI: <http://dx.doi.org/10.1016/j.chb.2020.106631>
- 1317 [144] Michele L. Ybarra, Kimberly J. Mitchell, Neal A. Palmer, and Sari L. Reisner. 2015. Online social support as a buffer against online and offline peer and sexual victimization among U.S. LGBT and non-LGBT youth. *Child Abuse & Neglect* 39 (1 2015), 123–136. DOI: <http://dx.doi.org/10.1016/j.chiabu.2014.08.006>
- 1318 [145] Rodrigo Zamith, Valerie Belair-Gagnon, and Seth C Lewis. 2020. Constructing audience quantification: Social influences and the development of norms about audience analytics and metrics. *New Media & Society* 22, 10 (Oct. 2020), 1763–1784. DOI: <http://dx.doi.org/10.1177/1461444819881735> Publisher: SAGE Publications.

1341 A DETAILED DESCRIPTIONS OF EACH TOPIC CATEGORY BASED ON CONTENT ANALYSIS

1342 A.1 Behaviour & Discipline

1343 The most common category that resonated across the dataset is parent’s help-seeking on their child’s behaviour or
 1344 disciplinary issues. These posts suggest that parents view Mumsnet as a safe space to openly share and seek the
 1345 community’s advice on personal parenting experience on their child’s disruptive or unanticipated behaviour. We found a
 1346 wide discussion of experiences that captured the nuances of children’s behaviour and consequently, parents’ concerns.
 1347 This ranges from aggressive tantrums such as “*throwing and hitting episodes*”, “*uncontrollable rages in class*” to posts
 1348 that suggested their children’s inappropriate behaviours. For example, a poster sought advice to deal with her awkward
 1349
 1350
 1351
 1352

1353 evening dinners: *“my 4 year old son keeps wanting to kiss me, my partner hates it and repeatedly tells him to stop”*. We
1354 observed that some posters also explained how these inappropriate behaviours are often ‘validated’ or observed by their
1355 immediate family or ecosystem and that provided an impetus to seek help from the community. One poster described
1356 how her son’s elaborate lies first brought to her attention when he lied to his grandmother that *“he’d rolled into the road
1357 after falling out of the pram”* but they did not use a pram, and several other elaborate stories surfaced from other family
1358 members and the nursery.
1359

1360 Many posters clearly value this intimate outlet to tap into other parents’ similar experience for assurance, often for
1361 determining if the child’s behaviour is ‘appropriate’ or ‘normal’. A parent, who initially felt her son is undergoing a phase,
1362 sought advice from the community after being told by her mom constantly to assess her child: *“my 5 year old son is
1363 asking me to constantly repeat myself or if everything is ok...has anyone else ever experienced this?”*. Posters also use
1364 Mumsnet as a form of expectation check to navigate the uncertainties of parenting, one poster lamented:
1365 *“AIBU (Am I being unreasonable) to expect my 4 year old to play by themselves for a short while without needing constant
1366 interaction?”*
1367

1368 After sharing their parenting struggles, the common discourse sought by posters is in getting advice to help manage
1369 their child’s behaviour appropriately: *“How can I stop this?”*, *“Please help!”*, *“Any tips please, I’d be grateful!”*. Posters
1370 use Mumsnet as an avenue to seek disciplinary strategies from other parents to grapple with their child’s behavioural
1371 episodes and often, as a last resort when they have *“reached the end of (their) tether”*. After being told not to eat the
1372 crisps, a poster commented that her daughter began a chain of uncontrollable tantrums in public and after numerous
1373 attempts to discipline and stop the behaviour: *“All I could do was stand in the alley way and cry. Through absolute
1374 anger and embarrassment, I literally cried my eyes out... I’m not sure if I handled the situation well enough and I am so
1375 upset. I’m wondering how others have/would handle this situation?”* Another poster struggles to find a right disciplinary
1376 approach for her headstrong 5 year old and commented: *“Is using time out appropriate for a 5 year old? We tried them a
1377 couple of years ago and frankly she wasn’t that bothered and ended up taking herself to the step after doing naughty
1378 things. Might it be time to revisit them? Star charts have no effect after a day or two.”*
1379

1380 It was evident that many posters sought to the community to express deep emotional and brutally honest struggles
1381 in parenting as a form of coping mechanism when their children’s behaviour feels out of control. One poster feeling
1382 overwhelmed as a single dad parenting three children shared his struggles managing his son’s behavioural issues such as
1383 crying every night, refusing to eat and *“if you tell him off he just laughs in your face”* expressed: *“I hate myself for saying
1384 it but I really don’t like my children. I dread school pick up, waking up in the morning. I feel like I’m failing as a parent.”*
1385
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1390 A.2 Parent’s Emotion

1391 In the threads we examined, posters used the forum to express strong negative emotions on various aspects of parenting,
1392 as a result of their parenting decisions, child’s behaviour or family members. These negative emotions are often
1393 about themselves as a parent, their child, partner, parent-in-laws or other family members. Many posters shared the
1394 disappointment they have for themselves after acting on regretful parenting choices. Often, posters acknowledged but
1395 found it hard to accept that their actions were due to a momentary lapse in judgement. One poster confessed:
1396
1397

1398 *“Something just snapped and I lifted her up by her coat and quite forcefully shoved her into the pram. I then took her
1399 soft toy and shoved it in her face, it left a faint bruise as my hand caught her head. This has never happened before and
1400 my dh (dear husband) says I should forgive myself and move on. That I didn’t intend to hurt her. But on some level I did
1401 want to hurt - not her specifically. It was not her fault but I lost control and lashed out. Now I feel like a monster and I am
1402 eaten up with guilt.”*
1403
1404

1405 Across the forum, other posters resonated similar sentiments for different instances: *“I will be feeding the baby and my*
 1406 *son will ask for a cuddle but I can’t, he will go off and be naughty as I’m feeding and I’ll lose my temper. . . I’m not fun*
 1407 *for him at all anymore, I feel like I just push him away. Honestly I’m really struggling. I’m a terrible mother.”* We also
 1408 observed that the extreme end of these threads suggest that the posters could be struggling with depression as they seek
 1409 the help or support they need to hang on by the thread. It is apparent that many of these posters expressed these feelings
 1410 of inadequacies for not living up to their ‘ideal standard’ of being a parent or not ‘doing enough’. One poster shared, *“I’m*
 1411 *snapping constantly and I’m so tired all of the time. I just don’t know how some mums do it. All I want to do is sleep. I*
 1412 *know it’ll all work out and that it’s all just temporary but I’m so close to throwing in the towel and quitting my job to*
 1413 *stay at home”*. Another poster shared her struggles with personality disorder and how she found it hard to maintain her
 1414 relationship with her children, and called out, *“I need serious help. I’m such a shit mother and I want to be back home. I*
 1415 *need to prove to myself I can do it but currently going down the same road as my childhood which has got me no where*
 1416 *positive for my life please help I’m a parent close to giving up.”*

1420 We also observed numerous discussions on the frustrations and mismatched expectations behind parenting with a
 1421 significant other. For instance, a poster explained how she wanted to dedicate individual attention and time for each child
 1422 and felt upset when her husband *“thinks I’m taking favourites and makes me feel guilty for wanting to spend alone time*
 1423 *with dd1 (dear daughter one)”*. She commented that *“tbh (to be honest) the weekends are the only time I ever have my*
 1424 *husband around to help out so aibu (am I being unreasonable)?”*.

1426 Posters have also shared how their relationships with or actions of their family members have weighed heavily on their
 1427 mental health. Raising a child in a family, immediate or extended, might mean some sharing of caretaking responsibilities
 1428 and parenting strategies. A poster explained how she overheard her mother-in-law’s conversations about her lack in
 1429 parenting and it made her feel *“sad that it has been confirmed to me that they think I’m not parenting how I should and it*
 1430 *angers me that they are judging me in my own home.”*

1432 What is common across the threads is the search for empathy. Posters relied on this outlet to vent their emotions
 1433 but more importantly, their posts suggest their desire for a community that listens and empathises with their seemingly
 1434 isolated struggles as a parent. A poster said, *“I just needed to talk to someone, anyone. No one around me will ever admit*
 1435 *to losing it. I don’t know, if people are angry at me, I deserve it. I just hoped that there isn’t something seriously wrong*
 1436 *with me and I’m not the only one.”*

1439 A.3 Activity & Product

1441 The community in Mumsnet often use this platform for the sharing and exchanging of information on parenting-related
 1442 products (such as games, books, gifts, strollers etc.) and things to do (leisure activities, holidays). These include gathering
 1443 advice, recommendations or suggestions for the poster’s child, themselves or their home. The affordances that the forum
 1444 has allowed posters to specify their exact needs. Hence, posters receive more targeted recommendations or suggestions
 1445 according to their unique needs. For instance, a poster detailed down the types of toys (e.g. *“Jigsaws, Vehicles”*) that do
 1446 not interest her bored 2-year-old and ask, *“I’d like to look into a few new toys to help stimulate/engage him. He seems to*
 1447 *prefer wooden toys, especially if it’s to do with problem-solving or working things out. Any suggestions?”*. Other posters
 1448 also attempt to get specific recommendations such as *“cars that will fit 3 (child) seats along the back in a 5 seater”*, *“new*
 1449 *ideas for meals”* and *“sparkly prince costumes”*.

1452 Of those threads that focused on the use of products or activities, many posters openly shared their personal parenting
 1453 situations or struggles for advice, such as keeping an energetic toddler entertained and managing appropriate screen time.
 1454 One poster shared: *“I’m wondering how much TV time to allow for my 3 year old. It’s just TV and no other sort of screen*
 1455

1457 *time. He doesn't nap anymore, so it's much easier for him to watch TV while I get jobs done. Do others have a daily limit?*
1458 *Or a limit per each time of watching TV? Do you have any tips for getting house work done without using TV?"*

1459 Other posters reinforced similar struggles in finding appropriate activities or strategies, especially in entertaining
1460 multiple children at the same time. One poster who also felt overwhelmed sought to Mumsnet to look for healthy activities
1461 to occupy her 3 children, commented: *"I've been worried about how much screen time they have been having and thought*
1462 *to turn off the TV completely today but OMG - It was difficuuuuult and so challenging...I'm not used to having all 3 of*
1463 *the kids there at once which is stressful. Anyone else struggling over the holidays?."* At the same time, some threads also
1464 sought product recommendations for the parents themselves, for example, a first-time parent *"not always sure how to*
1465 *respond when she (the child) pushes the boundaries. There are so many parenting books it's difficult to know which ones*
1466 *are effective. Any recommendations, please?"*.

1469 When the products or things that their child uses are in question, posters are eager to get second opinions to validate
1470 their decisions with the trusted community. One poster asked: *"Would you use a second-hand toddler sized mattress?*
1471 *(for a 3 year old) It's from a family friend, looks very clean, ... I'm not sure about it but can't decide whether I'm being*
1472 *unnecessarily cautious."*

1475 **A.4 Medical Concerns**

1476
1477 The code 'medical concerns' was applied in 41 excerpts which covered topics of diagnoses, analysing medical conditions
1478 or symptoms, parent-related medical issues, and planning for after care.

1479 **Diagnoses and coping with sickness** - Parents wrote posts trying to identify things like mysterious rashes, chicken
1480 pox, and blood in stool. They asked questions like, *"is this threadworms or thrush?"* while wondering what medical
1481 issues other symptoms indicated such as seizures, being cross-eyed or vomiting accompanied by lethargy. Parents asked
1482 practical advice on topics of dental hygiene - such as how to regularly brush bleeding gums. Further, parents expressed
1483 concerns about seemingly strange behaviours such as refusing liquids, throwing up from being upset, and episodes of
1484 children attacking others. Often parents would wonder if medical issues were related to other big changes - like new
1485 siblings joining the family. Even when children were clearly sick with things like colds, the flu, or hospital accidents,
1486 parents asked for advice on what activities to stay busy with and how to cope with lingering sicknesses. More serious
1487 issues (such as *"sensory meltdowns"*) were shared about kids with rare blood disorders, mood and personality disorders
1488 (like ADHD and bipolar), Autism, and special needs. One parent asked, *"What's the difference between poor parenting*
1489 *and SN? The preschool teacher said she knows that we love bomb and that we try to be positive with him but we need*
1490 *to be firmer. Maybe we are too caring. Maybe we are shit parents. Our 2 year old has had none of these issues, even*
1491 *accounting for the age difference."*

1495 **Aftermath of sickness and parents' issues** - Parents asked about how to hold accountability after dealing with
1496 choking hazards, proper etiquette with re-joining birthday parties after being sick, and how to properly support surgery
1497 recovery. They also wondered about longer-term consequences such as from vaccine side effects. These types of concerns
1498 held larger emotional charges with more chronic issues. One parent described feeling PTSD from multiple hospital visits
1499 with their kid. Meanwhile, parents' own mental health issues - such as phobias, PPD, and personality disorders also gave
1500 rise for concern. One parent shared, *"I'm not sure if it's sleep deprivation and adjusting to a new life or something else. I*
1501 *feel like I don't have the time or energy to seek help. I need serious help. I'm currently living away from home and my*
1502 *marriage and relationship with my children is critical. I'm such a bad mother and I want to be at home. I don't know what*
1503 *else to do. The only reason I'm living is my children! I need to prove to myself I can do it but currently going down the*
1504 *same road as my childhood which has got me nowhere positive for my life please help I'm a parent close to giving up."*

1509 Lastly, when parents themselves experienced needing prolonged medical attention, they sought advice for things like
1510 hospital visits.

1511 *“And to add to it all my dear daughter is having some separation anxiety with me now after I was recently admitted to*
1512 *hospital and she could only visit for a limited time which she found quite tough. With the added bonus of a new baby*
1513 *we’re worried she won’t cope at all. We’re not sure what to do. I’m so sorry if this doesn’t make any sense”*
1514
1515

1516 A.5 Sleep

1517 34 of our posts were coded for concerns related to children’s’ sleep patterns and the effects on the whole family. As
1518 with other topics, parents often wondered what are “normal” standards and expectations for naps and sleeping during
1519 the night (i.e.- *“who else is experiencing the ’2 year old sleep regression?”*). Parents’ main preoccupations related to
1520 understanding the optimal conditions for falling asleep, staying asleep, and integrating sleep with healthy, daily life habits.

1521 **Sleep Accessories** - In material considerations, parents asked for recommendations for sleep monitors, black-out
1522 curtains, beds and white noise machines. One parent shared an attempt at a DIY sleep aid solution, *“I purchased a teddy*
1523 *which my friend kindly wrote a letter for saying, ‘I’m here to help you sleep and be a big girl. It hasn’t worked and the*
1524 *lack of sleep is affecting her behaviour in the day.”* Parents were also preoccupied with switching beds and how to best
1525 arrange rooms for multiple children, especially to avoid fussy sleepers from waking up their siblings. For example, parents
1526 wondered when it is appropriate to switch from a toddler bed to a single bed or how to optimize for sharing bunk beds.
1527
1528

1529 **Falling and Staying Asleep** - Many parents shared existing bedtime routines and asked for support in improving them.
1530 For example, parents wondered if the order of kids (based on ages) positively or negatively influences sleep hygiene.
1531 Similarly, they shared concerns about relying on watching media at night or relying on bottles as well as breastfeeding
1532 to fall and stay asleep. Parents wondered about strategies for weaning off bottles or breastfeeding, including questions
1533 about introducing formula as part of the routine. One single mother shared the challenges of her toddlers’ demand for
1534 breastfeeding saying,
1535

1536 *“At home he only wants to breastfeed and cuddle. All weekend, all nights. If I get up and try and do anything else he*
1537 *cries. He doesn’t eat properly because he’s feeding. But he just gets really upset if he doesn’t feed. Apart from that he’s an*
1538 *easy, lovely little boy! I don’t know how this situation can continue, but also I don’t know how I will be able to wean him*
1539 *with everything else I have to do! Will it be easier or harder later?”*
1540
1541
1542

1543 In addition, parents’ asked for guidance with disturbances in the middle of the night. These included sleepwalking,
1544 bed-wetting, or waking parents up due to scary dreams or medical concerns. Besides feeding, parents shared coping
1545 mechanisms such as swaddling, cuddling, rocking, and laying in bed with parents. Several parents were not keen on the
1546 idea of sharing their beds with their children. As one parent shared, *“Co-sleeping isn’t an option. She also really hates the*
1547 *pram and car seat, and has done since birth. Any tips for one very drained mumma!! I’m loving the cuddles but miss*
1548 *being able to even go to the toilet without her getting upset.”*
1549

1550 **Behavioural and Daytime Consequences** - Sleep-related concerns proved to not only affect the night time but they
1551 often were connected to issues throughout the day. Parents shared that fussy eaters may awake in the middle of the night
1552 asking for food or drinks and they also wondered how to align napping schedules and needs with optimizing for children
1553 sleeping through the night. As one parent shared,
1554

1555 *“Is 2 and a half too young to give up on naps? My son is just a nightmare to get down. When he does sleep he normally*
1556 *sleeps over an hour. In the last week it’s been much shorter or no naps at all. Is this just a phase or is it the end of naps?”*
1557

1558 When children did not get their sleep needs met, parents commented on many unsettling behaviours. They reflected on
1559 frustrating episodes of separation anxiety, tantrums and behavioural issues at day-care or an inability to focus in school.
1560

1561 Parents feared that their children's' sleep issues could interfere with going to parties or sleepovers (especially when issues
1562 like bed-wetting are involved).

1563 **Parent exhaustion from dealing and troubleshooting** - Many parents expressed deep exasperation and going to
1564 great lengths to support healthy sleeping. From begrudgingly co-sleeping with parents to feeling mummy guilt with giving
1565 a child melatonin to, "*we've even worked with a private sleep consultant*". Parents commonly felt exhaustion, depression,
1566 anxiety, and loneliness:

1567
1568 *"I love him so much but I'm absolutely shattered, I've not had a proper sleep since before he was born. The longest*
1569 *sleep I've had was about 4 hours and that was a month ago. I'm also feeling really lonely and sad and I have bad anxiety,*
1570 *I'm constantly worried how each night will be with him."*

1571
1572 *"But I still can't switch off, basically it's 12:30am and I'm crying and grieving when it was just me and my two year*
1573 *old, I think I'm feeling hormonal which isn't helping. I just want a break after a horrific pregnancy which drained me."*

1574

1575

1576

A.6 Diet & Food Habits

1577 40 of our posts touched on topics of families preparing, eating, and digesting food while sharing emotionally fraught
1578 conundrums and experiences.

1579 **6.1 Food Preparation** - In matters of food planning, parents asked for recommendations of multivitamins and recipes.
1580 They expressed concerns for wanting variety in their meal offerings as well as convenience needs (in order to have meals
1581 available "on-the-go"). Parents also wondered about how to accommodate phases children were going through, such as
1582 kids deciding to become vegetarians. Throughout the posts, guilt and conflict continued to be a common category as
1583 parents struggled to balance the input of in-laws, the other parents or caregivers, and perceptions of providing the right
1584 amounts and types of food. For example, one parent shared:

1585
1586 *"I have a beautiful 2 year old and have always loved cooking but at the moment I have awful morning sickness and*
1587 *the smell of broccoli, cheese, mushrooms, eggs, and curry makes me sick. Unfortunately my daughter loves all of those.*
1588 *Can anyone recommend some relatively simple toddler meals that I can do? I really don't want to feed her ready meals*
1589 *but caved in yesterday and gave her one. I feel really guilty about what to make at the moment and she's having too*
1590 *much pasta. I could use those ingredients if there is a recipe that doesn't smell too strongly while cooking. Any wise*
1591 *mumsnetters have any ideas? Thanks."*

1592
1593 **6.2 Eating Food** - The most common sub-category within diet & food habits was advice seeking for dealing with food
1594 or drink fussiness. Parents shared tactics of trying bribes, preparing primarily bland foods, disguising healthy food into
1595 more appealing food, distracting children, and explaining the benefits of healthy eating. The top behavioural issues with
1596 fussiness included: picky appetites, only liking junk food, eating too little, only eating while distracted on screens, and
1597 spitting out food. Parents also wondered how to successfully get their children to take medicine and drink more water.
1598 While there can be individual issues with children's eating habits, one parent reflected on the chaos of eating together as a
1599 family, sharing:

1600
1601 *"Eating as a family, with three of them, I've taken the path of least resistance and offered them different meals. We also*
1602 *don't always eat together - to be honest it's an awful experience. Every mealtime is a battle. Sometimes I just want to be*
1603 *able to enjoy my own dinner before it goes cold without losing my temper with a child who is spitting chewed up chicken*
1604 *out or having a massive tantrum over having to eat a piece of carrot. Also, I work some evenings so we're not always*
1605 *together as a family anyway."*

1606
1607 **6.3 Digesting Food** - Many parents inquired about the effects of eating throughout the day on staying fed and asleep
1608 throughout the night. This was often intertwined with concerns of weaning toddlers off of breastfeeding and bottle feeding.

1609

1610

1611

1612

1613 Tired and exasperated parents complained about children waking up in the middle of the night, asking for milk. Lastly,
 1614 parents wondered what amounts and types of food were normal - especially if they noticed their children being particularly
 1615 energetic or starting to gain weight.
 1616

1617 **A.7 School & Day-care**

1618
 1619 24 Mumsnet posts that we coded reflected on issues that happened during school or day-care. On a broader level, parents
 1620 wondered how many days per week at pre-school were appropriate and how to balance weekly schedules out accordingly.
 1621 One parent exclaimed how her life felt structured around school needs in a suffocating and overwhelming way. She
 1622 shared,
 1623

1624 *“The school day has taken over my life” - I have two kids now who are nearly 2 and 4. The 4 year old started school in*
 1625 *September. Her school is a mile walk and I don't drive. The walks are not an issue and I am happy enough with the school*
 1626 *but I feel like the week is just repetitive and boring and the weekends are for ironing uniforms and packing bags and*
 1627 *preparing for Monday.”*
 1628

1629 Parents posted on Mumsnet asking about practicalities such as childcare vouchers as well as how to support their
 1630 children with social dynamics, such as teaching kids to stand up for themselves, trouble-shooting conflicts with friends,
 1631 and building resilient attitudes as well as positive self-talk.
 1632

1633 In dealing with workers at school and day-care, parents felt concerned about what was reported back to them.
 1634 For example, school or nursery caregivers would share about children reflecting on painful things at home or throw
 1635 uncontrollable tantrums before lunchtime. Parents would ask for advice about how to talk to their children appropriately
 1636 about these issues or deal with their eating needs. Another parent asked for support in the aftermath of a child's finger
 1637 getting amputated during a nursery school accident. She shared,
 1638

1639 *“...Now, I don't know what to do with the nursery. They have been in touch and said it's just an accident that couldn't*
 1640 *have been prevented. But I can't help but feel angry that they say it couldn't of been prevented. If his finger goes back to*
 1641 *normal I am happy to leave it at just a complaint but if there is more long term damage then I'm thinking of taking legal*
 1642 *action. Am I being unreasonable?... How would everyone else handle this situation?”*
 1643
 1644

1645 **A.8 Physical Development**

1646 The threads we examined reinforces how parents of children in these age range often lookout for pivotal developmental
 1647 milestones to assess their children's growth. Posters use Mumsnet to navigate uncertainties about their children's
 1648 development across wide-ranging topics, from the use of their dummies (pacifiers) to speech and communication skills.
 1649 For instance, a poster started a thread about her dummy conundrum where she finds it hard that her child can only be
 1650 soothed by breastfeeding but was unsure about the effects of using a dummy: *“Is it easy to misinterpret feeding cues? I*
 1651 *worry they affect teeth, speech, cause them to wake when the dummy falls out.”*
 1652
 1653

1654 For the threads we analysed, we observed that posters often look to relate others sharing similar experiences: *“I*
 1655 *was hoping other parents that have children that have gone through this could tell me what to expect please?”* One
 1656 poster explained her sudden realization that her daughter is noticeably overweight despite having an active routine and
 1657 home-cooked meals, and she asks: *“Only thing I can think of is that she's still breastfeeding and drinks A LOT of milk.*
 1658 *She feeds throughout the night... Has anyone else been through this? What did you do?”* In particular, we observed that
 1659 posters also tend to discuss developmental milestones by benchmarking *“is this normal for anyone else?”* with other
 1660 children. For example, a poster surveyed the community about her child's height: *“People keep saying he's short. haha.*
 1661 *Myself and his dad aren't tall but not tiny either. Does anyone else want to share their children's height at this age?”*.
 1662
 1663
 1664

A.9 Potty Training

The beginning and end of potty training typically happens around the age of 2 to 5 years old. The threads we examined related to this milestone with discussions about children's reluctance with using the potty and regression in potty training. This ranges from situational 'weeing' issues such as sleep 'weeing' in areas around the house (*"She has no memory of them in the morning and all of these events have happened whilst she's been asleep and . She's used to getting up and going to loo so this is new."*) to uncertainties around the right time to potty train.

Being potty trained is often considered a significant milestone for toddlers. One poster, who feels worried about her daughters' potty training progress related to her peers, shared: *"I've just had to shower her down yet again as she's walked in covered in poo from the waist down! I know it's all small steps but just wondered how long from people's experience it takes a toddler to realise when they need the toilet? My friend's daughter apparently learnt in 3 days which for me is a bit disheartening."*

Posters often discussed issues around potty training in parallel with their training or disciplinary attempts. One poster started to notice that her once potty trained daughter started to have accidents frequently despite her attempts to bring her to the toilet herself, and complained:

"We've tried taking her to the naughty corner and telling her off for each accident, and on the flip side lots of praise and making it clear she would get chocolate buttons for using the toilet, but we are getting nowhere. . . It's so frustrating when we know full well she knows how to use the toilet. Do we just give it a break for a few weeks? Do we try to keep forcing the issue?"

Another poster also shared a similar experience in another thread about her son who was already potty trained for 6 months started to act out and regress: *"started being a bit "naughty" in other ways, lots of NO! shouting at me and wagging his finger, "it's not fair!" and foot stamping. all completely out of character."* Despite disciplining him in different ways such as *"praising loads when using the potty, being "disappointed" with him when he's had an accident (never ever told him off) and asking him why, he just says sorry."*, the poster found little success and turned to seek advice from the community.

Our analysis further highlighted 7 remaining categories that posters commonly sought support for: Physical Development (e.g., concerns about "regressed" developmental milestones such as speech), Activity & Product (e.g., getting recommendations of products like *"cars which will fit 3 [children] seats"* and *"sparkly prince costumes"*), Sleep (e.g., issues with sleep schedules when the child is *"just a nightmare to get down"*), Diet & Food Habits (e.g., dealing with picky eaters that throws *"a massive tantrum over eating one piece of carrot"*), Medical Concerns (e.g., identifying unknown symptoms), School & Day-care (e.g., dealing with school teachers) and Other (e.g., advice on family-friendly holidays).

A.10 Other

30 of our coded posts had the ambiguous category of 'other' associated with them. These included miscellaneous questions on: travel, car safety, react to negative comments about one's child, reassuring a child after moving a lot, pet advice, how to be eco-friendly in parenting, etc. Some of the continued rants also included exasperation about getting anything useful done while looking after the kids or, *"how on earth do you cope if you are both working the next day and with all the sleepless nights that are a regular occurrence?! I mean, several nights back-to-back, and around 2 to 3 hours of broken sleep."*

Several sub-categories that emerged under 'other' included coordinating with other parents in the family unit and taking care of foster children or stepchildren. For example, parents asked for advice about how to deal with partners who

1717 struggle to help out or are alcoholic or abusive. Often parents shared frustrations about custody issues, negotiating care, or
1718 how marital issues and divorces were affecting the children. Similarly, questions arose about integrating divorcee's new
1719 partners or dealing with overbearing in-laws. For example, one mother shared:

1720 *"I've explained this to my husband and he says you have to take the good with the bad and if she's offering to help,*
1721 *just grin and bear it. It's unfair, this is my home and a mostly, I kind of just sit up stairs waiting for the time to pass for*
1722 *when she eventually leaves. It sounds horrible but it's just so overwhelming and annoying."*
1723

1724 Posts about child planning included weighing the pros and cons for more children, discerning issues with large age
1725 gaps between children, and managing adding more children into an already stressful life. In regards to deciding, one
1726 mother shared,

1727 *"I feel a bit environmentally irresponsible having yet another baby (please don't take offence if you have many dear*
1728 *children - I would never think this of anyone else). Oh gosh, I just don't know - although I do notice that I have put a*
1729 *caveat after almost every con..."*
1730

1731 In considering another child, this mother reflected on concerns about losing sleep:

1732 *"My son is 2 years old but I honestly can't imagine another baby right now - going back to sleepless nights fills me*
1733 *with dread. Especially with not having the same luxuries as when my son was a baby - 'sleeping when they sleep' for*
1734 *example when there's another child to look after too. How did others decide on the right time for no2 and are the early*
1735 *years as hard as I'm imagining? Outside of my concerns of managing 2 younger kids, I know I'd regret not having another*
1736 *when my son gets older."*
1737

1738 Finally, there were only four excerpts coded under travel-related topics. These included inquiries about travel-friendly
1739 products like portable car seats and a travel cot and a vent about being on holidays with no childcare.
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